

OM-228 322A 2006−06

Processes



MIG (GMAW) Welding
Flux Cored (FCAW) Welding
(Gas- And Self-Shielded)

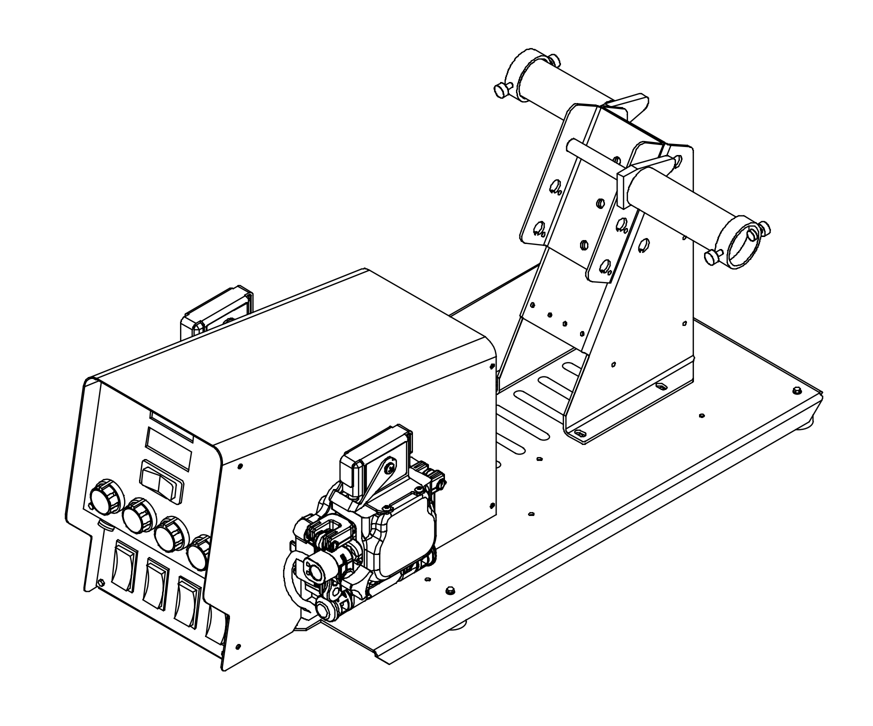
Description



Wire Feeder

CE

D-75S, D-75D



OWNER'S MANUAL

File: MIG (GMAW)





Visit our website at
www.MillerWelds.com

From Miller to You

Thank you and *congratulations* on choosing Miller. Now you can get the job done and get it done right. We know you don't have time to do it any other way.

That's why when Niels Miller first started building arc welders in 1929, he made sure his products offered long-lasting value and superior quality. Like you, his customers couldn't afford anything less. Miller products had to be more than the best they could be. They had to be the best you could buy.

Today, the people that build and sell Miller products continue the tradition. They're just as committed to providing equipment and service that meets the high standards of quality and value established in 1929.

This Owner's Manual is designed to help you get the most out of your Miller products. Please take time to read the Safety precautions. They will help you protect yourself against potential hazards on the worksite. We've made installation and operation quick and easy. With Miller you can count on years of reliable service with proper maintenance. And if for some reason the unit needs repair, there's a Troubleshooting section that will help you figure out what the problem is. The parts list will then help you to decide the exact part you may need to fix the problem. Warranty and service information for your particular model are also provided.



Miller is the first welding equipment manufacturer in the U.S.A. to be registered to the ISO 9001:2000 Quality System Standard.

Miller Electric manufactures a full line of welders and welding related equipment. For information on other quality Miller products, contact your local Miller distributor to receive the latest full line catalog or individual specification sheets. **To locate your nearest distributor or service agency call 1-800-4-A-Miller, or visit us at www.MillerWelds.com on the web.**



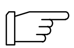
Working as hard as you do – every power source from Miller is backed by the most hassle-free warranty in the business.



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WARRANTY

Declaration of Conformity for European Community (CE) Products

NOTE 	*This information is provided for units with CE certification (see rating label on unit).*

Manufacturer:

Miller Electric Mg. Co.
1635 W. Spencer St.
Appleton, WI 54914 USA
Phone: (920) 734-9821

European Contact:

Mr. Danilo Fedolfi,
Managing Director
ITW Welding Products Italy S.r.l.
Via Privata Iseo 6/E
20098 San Giuliano
Milanese, Italy
Phone: 39(02)98290-1
Fax: 39(02)98290203

European Contact Signature: ______________________

Declares that the product: **D-75S, D-75D**

conforms to the following Directives and Standards:

Directives

Low Voltage Directive: 73/23/EEC

Electromagnetic Compatibility (EMC) Directive: 89/336/EEC

Machinery Directives: 98/37/EEC, 91/368/EEC, 92/31/EEC, 133/04, 93/68/EEC

Standards

Arc Welding Equipment − Part 5: Wire Feeders. IEC 60974-5 Ed. 1

Arc Welding Equipment − Part 10: Electromagnetic Compatibility (EMC) Requirements. IEC 60974-10 August 2002

Arc Welding Equipment − Part 1: Welding Power Sources. IEC 60974-1 Ed. 2.1

Degrees Of Protection Provided By Enclosure (IP Code) IEC 60529 Ed. 2.1

Insulation Coordination For Equipment Within Low-Voltage Systems −
Part 1: Principles, Requirements and Tests: IEC 60664-1 Ed. 1.1

The product technical file is maintained by the responsible Business Unit(s) located at the manufacturing facility.

SECTION 1 – SAFETY PRECAUTIONS - READ BEFORE USING

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▲ **Warning: Protect yourself and others from injury — read and follow these precautions.**

1-1. Symbol Usage



Means Warning! Watch Out! There are possible hazards with this procedure! The possible hazards are shown in the adjoining symbols.

▲ **Marks a special safety message.**

☞ *Means "Note"; not safety related.*

This group of symbols means Warning! Watch Out! possible ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

1-2. Arc Welding Hazards

▲ **The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard. The safety information given below is only a summary of the more complete safety information found in the Safety Standards listed in Section 1-5. Read and follow all Safety Standards.**

▲ **Only qualified persons should install, operate, maintain, and repair this unit.**

▲ **During operation, keep everybody, especially children, away.**



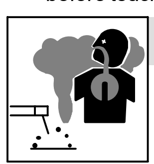
ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

- Do not touch live electrical parts.
- Wear dry, hole-free insulating gloves and body protection.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not use AC output in damp areas, if movement is confined, or if there is a danger of falling.
- Use AC output ONLY if required for the welding process.
- If AC output is required, use remote output control if present on unit.
- Additional safety precautions are required when any of the following electrically hazardous conditions are present: in damp locations or while wearing wet clothing; on metal structures such as floors, gratings, or scaffolds; when in cramped positions such as sitting, kneeling, or lying; or when there is a high risk of unavoidable or accidental contact with the workpiece or ground. For these conditions, use the following equipment in order presented: 1) a semiautomatic DC constant voltage (wire) welder, 2) a DC manual (stick) welder, or 3) an AC welder with reduced open-circuit voltage. In most situations, use of a DC, constant voltage wire welder is recommended. And, do not work alone!
- Disconnect input power or stop engine before installing or servicing this equipment. Lockout/tagout input power according to OSHA 29 CFR 1910.147 (see Safety Standards).
- Properly install and ground this equipment according to its Owner's Manual and national, state, and local codes.
- Always verify the supply ground – check and be sure that input power cord ground wire is properly connected to ground terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet.
- When making input connections, attach proper grounding conductor first – double-check connections.
- Frequently inspect input power cord for damage or bare wiring – replace cord immediately if damaged – bare wiring can kill.
- Turn off all equipment when not in use.
- Do not use worn, damaged, undersized, or poorly spliced cables.
- Do not drape cables over your body.
- If earth grounding of the workpiece is required, ground it directly with a separate cable.
- Do not touch electrode if you are in contact with the work, ground, or another electrode from a different machine.
- Do not touch electrode holders connected to two welding machines at the same time since double open-circuit voltage will be present.
- Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
- Wear a safety harness if working above floor level.
- Keep all panels and covers securely in place.
- Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
- Insulate work clamp when not connected to workpiece to prevent contact with any metal object.
- Do not connect more than one electrode or work cable to any single weld output terminal.

SIGNIFICANT DC VOLTAGE exists in inverter-type welding power sources after removal of input power.

- Turn Off inverter, disconnect input power, and discharge input capacitors according to instructions in Maintenance Section before touching any parts.



FUMES AND GASES can be hazardous.

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

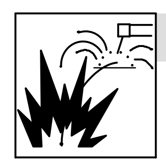
- Keep your head out of the fumes. Do not breathe the fumes.
- If inside, ventilate the area and/or use local forced ventilation at the arc to remove welding fumes and gases.
- If ventilation is poor, wear an approved air-supplied respirator.
- Read and understand the Material Safety Data Sheets (MSDSs) and the manufacturer's instructions for metals, consumables, coatings, cleaners, and degreasers.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watchperson nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.



ARC RAYS can burn eyes and skin.

Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

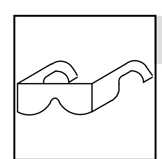
- Wear an approved welding helmet fitted with a proper shade of filter lenses to protect your face and eyes when welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards).
- Wear approved safety glasses with side shields under your helmet.
- Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the arc.
- Wear protective clothing made from durable, flame-resistant material (leather, heavy cotton, or wool) and foot protection.



WELDING can cause fire or explosion.

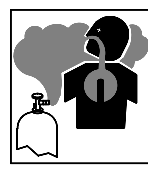
Welding on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Sparks can fly off from the welding arc. The flying sparks, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding.

- Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers.
- Do not weld where flying sparks can strike flammable material.
- Protect yourself and others from flying sparks and hot metal.
- Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
- Watch for fire, and keep a fire extinguisher nearby.
- Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Do not weld on closed containers such as tanks, drums, or pipes, unless they are properly prepared according to AWS F4.1 (see Safety Standards).
- Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock, sparks, and fire hazards.
- Do not use welder to thaw frozen pipes.
- Remove stick electrode from holder or cut off welding wire at contact tip when not in use.
- Wear oil-free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.
- Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding.
- Follow requirements in OSHA 1910.252 (a) (2) (iv) and NFPA 51B for hot work and have a fire watcher and extinguisher nearby.



FLYING METAL can injure eyes.

- Welding, chipping, wire brushing, and grinding cause sparks and flying metal. As welds cool, they can throw off slag.
- Wear approved safety glasses with side shields even under your welding helmet.



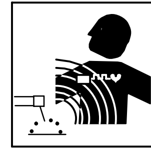
BUILDUP OF GAS can injure or kill.

- Shut off shielding gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.



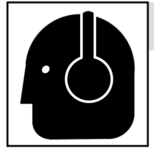
HOT PARTS can cause severe burns.

- Do not touch hot parts bare handed.
- Allow cooling period before working on gun or torch.
- To handle hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.



MAGNETIC FIELDS can affect pacemakers.

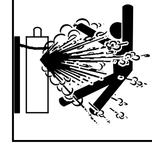
- Pacemaker wearers keep away.
- Wearers should consult their doctor before going near arc welding, gouging, or spot welding operations.



NOISE can damage hearing.

Noise from some processes or equipment can damage hearing.

- Wear approved ear protection if noise level is high.

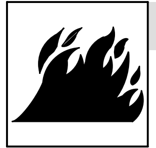


CYLINDERS can explode if damaged.

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

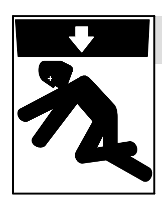
- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
- Keep cylinders away from any welding or other electrical circuits.
- Never drape a welding torch over a gas cylinder.
- Never allow a welding electrode to touch any cylinder.
- Never weld on a pressurized cylinder − explosion will result.
- Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
- Turn face away from valve outlet when opening cylinder valve.
- Keep protective cap in place over valve except when cylinder is in use or connected for use.
- Use the right equipment, correct procedures, and sufficient number of persons to lift and move cylinders.
- Read and follow instructions on compressed gas cylinders, associated equipment, and Compressed Gas Association (CGA) publication P-1 listed in Safety Standards.

1-3. Additional Symbols For Installation, Operation, And Maintenance



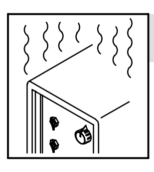
FIRE OR EXPLOSION hazard.

- Do not install or place unit on, over, or near combustible surfaces.
- Do not install unit near flammables.
- Do not overload building wiring – be sure power supply system is properly sized, rated, and protected to handle this unit.



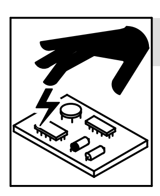
FALLING UNIT can cause injury.

- Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.



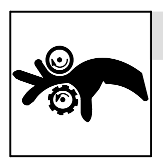
OVERUSE can cause OVERHEATING

- Allow cooling period; follow rated duty cycle.
- Reduce current or reduce duty cycle before starting to weld again.
- Do not block or filter airflow to unit.



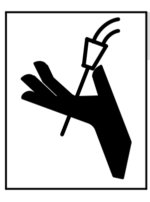
STATIC (ESD) can damage PC boards.

- Put on grounded wrist strap BEFORE handling boards or parts.
- Use proper static-proof bags and boxes to store, move, or ship PC boards.



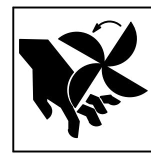
MOVING PARTS can cause injury.

- Keep away from moving parts.
- Keep away from pinch points such as drive rolls.



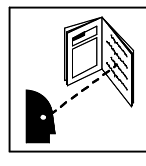
WELDING WIRE can cause injury.

- Do not press gun trigger until instructed to do so.
- Do not point gun toward any part of the body, other people, or any metal when threading welding wire.



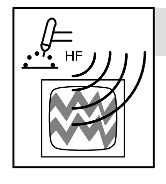
MOVING PARTS can cause injury.

- Keep away from moving parts such as fans.
- Keep all doors, panels, covers, and guards closed and securely in place.
- Have only qualified persons remove doors, panels, covers, or guards for maintenance as necessary.
- Reinstall doors, panels, covers, or guards when maintenance is finished and before reconnecting input power.



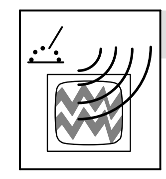
READ INSTRUCTIONS.

- Read Owner's Manual before using or servicing unit.
- Use only genuine Miller/Hobart replacement parts.



H.F. RADIATION can cause interference.

- High-frequency (H.F.) can interfere with radio navigation, safety services, computers, and communications equipment.
- Have only qualified persons familiar with electronic equipment perform this installation.
- The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation.
- If notified by the FCC about interference, stop using the equipment at once.
- Have the installation regularly checked and maintained.
- Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.



ARC WELDING can cause interference.

- Electromagnetic energy can interfere with sensitive electronic equipment such as computers and computer-driven equipment such as robots.
- Be sure all equipment in the welding area is electromagnetically compatible.
- To reduce possible interference, keep weld cables as short as possible, close together, and down low, such as on the floor.
- Locate welding operation 100 meters from any sensitive electronic equipment.
- Be sure this welding machine is installed and grounded according to this manual.
- If interference still occurs, the user must take extra measures such as moving the welding machine, using shielded cables, using line filters, or shielding the work area.

1-4. California Proposition 65 Warnings

▲ **Welding or cutting equipment produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)**

▲ **Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.**

For Gasoline Engines:

▲ **Engine exhaust contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.**

For Diesel Engines:

▲ **Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.**

1-5. Principal Safety Standards

Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1, from Global Engineering Documents (phone: 1-877-413-5184, website: www.global.ihs.com).

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping, American Welding Society Standard AWS F4.1 from Global Engineering Documents (phone: 1-877-413-5184, website: www.global.ihs.com).

National Electrical Code, NFPA Standard 70, from National Fire Protection Association, P.O. Box 9101, 1 Battery March Park, Quincy, MA 02269−9101 (phone: 617−770−3000, website: www.nfpa.org).

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 1735 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202−4102 (phone: 703−412−0900, website: www.cganet.com).

Code for Safety in Welding and Cutting, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3 (phone: 800−463−6727 or in Toronto 416−747−4044, website: www.csa−international.org).

Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 11 West 42nd Street, New York, NY 10036−8002 (phone: 212−642−4900, website: www.ansi.org).

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B, from National Fire Protection Association, P.O. Box 9101, 1 Battery March Park, Quincy, MA 02269−9101 (phone: 617−770−3000, website: www.nfpa.org).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart Q, and Part 1926, Subpart J, from U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250 (there are 10 Regional Offices−−phone for Region 5, Chicago, is 312−353−2220, website: www.osha.gov).

1-6. EMF Information

Considerations About Welding And The Effects Of Low Frequency Electric And Magnetic Fields

Welding current, as it flows through welding cables, will cause electromagnetic fields. There has been and still is some concern about such fields. However, after examining more than 500 studies spanning 17 years of research, a special blue ribbon committee of the National Research Council concluded that: “The body of evidence, in the committee’s judgment, has not demonstrated that exposure to power-frequency electric and magnetic fields is a human-health hazard.” However, studies are still going forth and evidence continues to be examined. Until the final conclusions of the research are reached, you may wish to minimize your exposure to electromagnetic fields when welding or cutting.

To reduce magnetic fields in the workplace, use the following procedures:

1. Keep cables close together by twisting or taping them.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.
4. Keep welding power source and cables as far away from operator as practical.
5. Connect work clamp to workpiece as close to the weld as possible.

About Pacemakers:

Pacemaker wearers consult your doctor before welding or going near welding operations. If cleared by your doctor, then following the above procedures is recommended.

SECTION 2 − CONSIGNES DE SÉCURITÉ − LIRE AVANT UTILISATION

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▲ **Avertissement : se protéger et protéger les autres contre le risque de blessure — lire et respecter ces consignes.**

2-1. Symboles utilisés



Symbole graphique d'avertissement ! Attention ! Cette procédure comporte des risques possibles ! Les dangers éventuels sont représentés par les symboles graphiques joints.

▲ **Indique un message de sécurité particulier**

☞ *Signifie NOTE ; n'est pas relatif à la sécurité.*

Ce groupe de symboles signifie Avertissement ! Attention ! Risques d'ÉLECTROCUTION, ORGANES MOBILES et PARTIES CHAUDES. Consulter les symboles et les instructions afférentes ci-dessous concernant les mesures à prendre pour supprimer les dangers.

2-2. Dangers relatifs au soudage à l'arc

▲ **Les symboles représentés ci-dessous sont utilisés dans ce manuel pour attirer l'attention et identifier les dangers possibles. En présence de l'un de ces symboles, prendre garde et suivre les instructions afférentes pour éviter tout risque. Les instructions en matière de sécurité indiquées ci-dessous ne constituent qu'un sommaire des instructions de sécurité plus complètes fournies dans les normes de sécurité énumérées dans la Section 2-5. Lire et observer toutes les normes de sécurité.**

▲ **Seul un personnel qualifié est autorisé à installer, faire fonctionner, entretenir et réparer cet appareil.**

▲ **Pendant le fonctionnement, maintenir à distance toutes les personnes, notamment les enfants de l'appareil.**



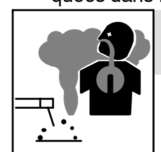
UNE DÉCHARGE ÉLECTRIQUE peut entraîner la mort.

Le contact d'organes électriques sous tension peut provoquer des accidents mortels ou des brûlures graves. Le circuit de l'électrode et de la pièce est sous tension lorsque le courant est délivré à la sortie. Le circuit d'alimentation et les circuits internes de la machine sont également sous tension lorsque l'alimentation est sur Marche. Dans le mode de soudage avec du fil, le fil, le dérouleur, le bloc de commande du rouleau et toutes les parties métalliques en contact avec le fil sont sous tension électrique. Un équipement installé ou mis à la terre de manière incorrecte ou impropre constitue un danger.

- Ne pas toucher aux pièces électriques sous tension.
- Porter des gants isolants et des vêtements de protection secs et sans trous.
- S'isoler de la pièce à couper et du sol en utilisant des housses ou des tapis assez grands afin d'éviter tout contact physique avec la pièce à couper ou le sol.
- Ne pas se servir de source électrique à courant électrique dans les zones humides, dans les endroits confinés ou là où on risque de tomber.
- Se servir d'une source électrique à courant électrique UNIQUEMENT si le procédé de soudage le demande.
- Si l'utilisation d'une source électrique à courant électrique s'avère nécessaire, se servir de la fonction de télécommande si l'appareil en est équipé.
- D'autres consignes de sécurité sont nécessaires dans les conditions suivantes : risques électriques dans un environnement humide ou si l'on porte des vêtements mouillés ; sur des structures métalliques telles que sols, grilles ou échafaudages ; en position coincée comme assise, à genoux ou couchée ; ou s'il y a un risque élevé de contact inévitable ou accidentel avec la pièce à souder ou le sol. Dans ces conditions, utiliser les équipements suivants, dans l'ordre indiqué : 1) un poste à souder DC à tension constante (à fil), 2) un poste à souder DC manuel (électrode) ou 3) un poste à souder AC à tension à vide réduite. Dans la plupart des situations, l'utilisation d'un poste à souder DC à fil à tension constante est recommandée. En outre, ne pas travailler seul !
- Couper l'alimentation ou arrêter le moteur avant de procéder à l'installation, à la réparation ou à l'entretien de l'appareil. Déverrouiller l'alimentation selon la norme OSHA 29 CFR 1910.147 (voir normes de sécurité).
- Installer le poste correctement et le mettre à la terre convenablement selon les consignes du manuel de l'opérateur et les normes nationales, provinciales et locales.
- Toujours vérifier la terre du cordon d'alimentation. Vérifier et s'assurer que le fil de terre du cordon d'alimentation est bien raccordé à la borne de terre du sectionneur ou que la fiche du cordon est raccordée à une prise correctement mise à la terre.
- En effectuant les raccordements d'entrée, fixer d'abord le conducteur de mise à la terre approprié et contre-vérifier les connexions.
- Vérifier fréquemment le cordon d'alimentation afin de s'assurer qu'il n'est pas altéré ou à nu, le remplacer immédiatement s'il l'est. Un fil à nu peut entraîner la mort.
- L'équipement doit être hors tension lorsqu'il n'est pas utilisé.
- Ne pas utiliser des câbles usés, endommagés, de grosseur insuffisante ou mal épissés.
- Ne pas enrouler les câbles autour du corps.
- Si la pièce soudée doit être mise à la terre, le faire directement avec un câble distinct.
- Ne pas toucher l'électrode quand on est en contact avec la pièce, la terre ou une électrode provenant d'une autre machine.
- Ne pas toucher des porte électrodes connectés à deux machines en même temps à cause de la présence d'une tension à vide doublée.
- N'utiliser qu'un matériel en bon état. Réparer ou remplacer sur-le-champ les pièces endommagées. Entretenir l'appareil conformément à ce manuel.
- Porter un harnais de sécurité si l'on doit travailler au-dessus du sol.
- S'assurer que tous les panneaux et couvercles sont correctement en place.
- Fixer le câble de retour de façon à obtenir un bon contact métal-métal avec la pièce à souder ou la table de travail, le plus près possible de la soudure.
- Isoler la pince de masse quand pas mis à la pièce pour éviter le contact avec tout objet métallique.
- Ne pas raccorder plus d'une électrode ou plus d'un câble de masse à une même borne de sortie de soudage.

Il reste une TENSION DC NON NÉGLIGEABLE dans les sources de soudage onduleur quand on a coupé l'alimentation.

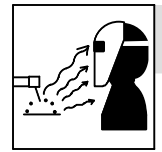
- Arrêter les convertisseurs, débrancher le courant électrique et décharger les condensateurs d'alimentation selon les instructions indiquées dans la partie Entretien avant de toucher les pièces.



LES FUMÉES ET LES GAZ peuvent être dangereux.

Le soudage génère des fumées et des gaz. Leur inhalation peut être dangereuse pour la santé.

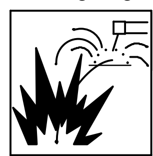
- Ne pas mettre sa tête au-dessus des vapeurs. Ne pas respirer ces vapeurs.
- À l'intérieur, ventiler la zone et/ou utiliser une ventilation forcée au niveau de l'arc pour l'évacuation des fumées et des gaz de soudage.
- Si la ventilation est médiocre, porter un respirateur anti-vapeurs approuvé.
- Lire et comprendre les spécifications de sécurité des matériaux (MSDS) et les instructions du fabricant concernant les métaux, les consommables, les revêtements, les nettoyants et les dégraisseurs.
- Travailler dans un espace fermé seulement s'il est bien ventilé ou en portant un respirateur à alimentation d'air. Demander toujours à un surveillant dûment formé de se tenir à proximité. Des fumées et des gaz de soudage peuvent déplacer l'air et abaisser le niveau d'oxygène provoquant des blessures ou des accidents mortels. S'assurer que l'air de respiration ne présente aucun danger.
- Ne pas souder dans des endroits situés à proximité d'opérations de dégraissage, de nettoyage ou de pulvérisation. La chaleur et les rayons de l'arc peuvent réagir en présence de vapeurs et former des gaz hautement toxiques et irritants.
- Ne pas souder des métaux munis d'un revêtement, tels que l'acier galvanisé, plaqué en plomb ou au cadmium à moins que le revêtement n'ait été enlevé dans la zone de soudure, que l'endroit soit bien ventilé et en portant un respirateur à alimentation d'air. Les revêtements et tous les métaux renfermant ces éléments peuvent dégager des fumées toxiques en cas de soudage.



LES RAYONS D'ARC peuvent entraîner des brûlures aux yeux et à la peau.

Le rayonnement de l'arc du procédé de soudage génère des rayons visibles et invisibles intenses (ultraviolets et infrarouges) susceptibles de provoquer des brûlures dans les yeux et sur la peau. Des étincelles sont projetées pendant le soudage.

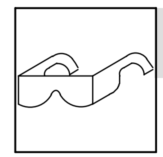
- Porter un casque de soudage approuvé muni de verres filtrants approprié pour protéger visage et yeux pendant le soudage (voir ANSI Z49.1 et Z87.1 énuméré dans les normes de sécurité).
- Porter des lunettes de sécurité avec écrans latéraux même sous votre casque.
- Avoir recours à des écrans protecteurs ou à des rideaux pour protéger les autres contre les rayonnements les éblouissements et les étincelles ; prévenir toute personne sur les lieux de ne pas regarder l'arc.
- Porter des vêtements confectionnés avec des matières résistantes et ignifuges (cuir, coton lourd ou laine) et des bottes de protection.



LE SOUDAGE peut provoquer un incendie ou une explosion.

Le soudage effectué sur des conteneurs fermés tels que des réservoirs, tambours ou des conduites peut provoquer leur éclatement. Des étincelles peuvent être projetées de l'arc de soudure. La projection d'étincelles, des pièces chaudes et des équipements chauds peuvent provoquer des incendies et des brûlures. Le contact accidentel de l'électrode avec des objets métalliques peut provoquer des étincelles, une explosion, une surchauffe ou un incendie. Avant de commencer le soudage, vérifier et s'assurer que l'endroit ne présente pas de danger.

- Déplacer toutes les substances inflammables à une distance de 10,7 m de l'arc de soudage. En cas d'impossibilité, les recouvrir soigneusement avec des protections homologuées.
- Ne pas souder dans un endroit où des étincelles peuvent tomber sur des substances inflammables.
- Se protéger, ainsi que toute autre personne travaillant sur les lieux, contre les étincelles et le métal chaud.
- Des étincelles et des matériaux chauds du soudage peuvent facilement passer dans d'autres zones en traversant de petites fissures et des ouvertures.
- Afin d'éliminer tout risque de feu, être vigilant et garder toujours un extincteur à la portée de main.
- Le soudage effectué sur un plafond, plancher, paroi ou séparation peut déclencher un incendie de l'autre côté.
- Ne pas effectuer le soudage sur des conteneurs fermés tels que des réservoirs, tambours, ou conduites, à moins qu'ils n'aient été préparés correctement conformément à AWS F4.1 (voir les normes de sécurité).
- Brancher le câble de masse sur la pièce le plus près possible de la zone de soudage pour éviter le transport du courant sur une longue distance par des chemins inconnus éventuels en provoquant des risques d'électrocution, d'étincelles et d'incendie.
- Ne pas utiliser le poste de soudage pour dégeler des conduites gelées.
- En cas de non-utilisation, enlever la baguette d'électrode du porte-électrode ou couper le fil à la pointe de contact.
- Porter des vêtements de protection exempts d'huile tels que des gants en cuir, une veste résistante, des pantalons sans revers, des bottes et un casque.
- Avant de souder, retirer toute substance combustible de ses poches telles qu'un allumeur au butane ou des allumettes.
- Suivre les consignes de OSHA 1910.252 (a) (2) (iv) et de NFPA 51B pour travaux de soudage et prévoir un détecteur d'incendie et un extincteur à proximité.



DES PARTICULES VOLANTES peuvent blesser les yeux.

- Le soudage, l'écaillement, le passage de la pièce à la brosse en fil de fer, et le meulage génèrent des étincelles et des particules métalliques volantes. Pendant la période de refroidissement des soudures, elles risquent de projeter du laitier.
- Porter des lunettes de sécurité avec écrans latéraux ou un écran facial.



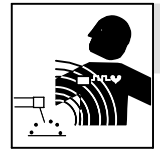
LES ACCUMULATIONS DE GAZ risquent de provoquer des blessures ou même la mort.

- Fermer l'alimentation du gaz protecteur en cas de non-utilisation.
- Veiller toujours à bien aérer les espaces confinés ou se servir d'un respirateur d'adduction d'air homologué.



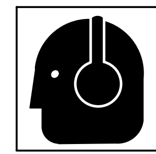
DES PIÈCES CHAUDES peuvent provoquer des brûlures graves.

- Ne pas toucher des parties chaudes à mains nues.
- Prévoir une période de refroidissement avant d'utiliser le pistolet ou la torche.
- Ne pas toucher aux pièces chaudes, utiliser les outils recommandés et porter des gants de soudage et des vêtements épais pour éviter les brûlures.



LES CHAMPS MAGNÉTIQUES peuvent affecter les stimulateurs cardiaques.

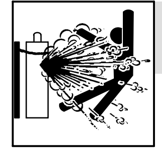
- Porteurs de stimulateur cardiaque, rester à distance.
- Les porteurs d'un stimulateur cardiaque doivent d'abord consulter leur médecin avant de s'approcher des opérations de soudage à l'arc, de gougeage ou de soudage par points.



LE BRUIT peut endommager l'ouïe.

Le bruit des processus et des équipements peut affecter l'ouïe.

- Porter des protections approuvées pour les oreilles si le niveau sonore est trop élevé.

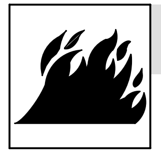


LES BOUTEILLES peuvent exploser si elles sont endommagées.

Des bouteilles de gaz protecteur contiennent du gaz sous haute pression. Si une bouteille est endommagée, elle peut exploser. Du fait que les bouteilles de gaz font normalement partie du procédé de soudage, les manipuler avec précaution.

- Protéger les bouteilles de gaz comprimé d'une chaleur excessive, des chocs mécaniques, des dommages physiques, du laitier, des flammes ouvertes, des étincelles et des arcs.
- Placer les bouteilles debout en les fixant dans un support stationnaire ou dans un porte-bouteilles pour les empêcher de tomber ou de se renverser.
- Tenir les bouteilles éloignées des circuits de soudage ou autres circuits électriques.
- Ne jamais placer une torche de soudage sur une bouteille à gaz.
- Une électrode de soudage ne doit jamais entrer en contact avec une bouteille.
- Ne jamais souder une bouteille pressurisée – risque d'explosion.
- Utiliser seulement des bouteilles de gaz protecteur, régulateurs, tuyaux et raccords convenables pour cette application spécifique ; les maintenir ainsi que les éléments associés en bon état.
- Détourner votre visage du détendeur-régulateur lorsque vous ouvrez la soupape de la bouteille.
- Le couvercle du détendeur doit toujours être en place, sauf lorsque la bouteille est utilisée ou qu'elle est reliée pour usage ultérieur.
- Utiliser les équipements corrects, les bonnes procédures et suffisamment de personnes pour soulever et déplacer les bouteilles.
- Lire et suivre les instructions sur les bouteilles de gaz comprimé, l'équipement connexe et le dépliant P-1 de la CGA (Compressed Gas Association) mentionné dans les principales normes de sécurité.

2-3. Dangers supplémentaires en relation avec l'installation, le fonctionnement et la maintenance



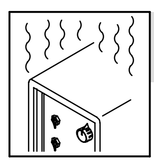
Risque D'INCENDIE OU D'EXPLOSION.

- Ne pas placer l'appareil sur, au-dessus ou à proximité de surfaces inflammables.
- Ne pas installer l'appareil à proximité de produits inflammables.
- Ne pas surcharger l'installation électrique − s'assurer que l'alimentation est correctement dimensionnée et protégée avant de mettre l'appareil en service.



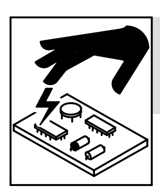
LA CHUTE DE L'APPAREIL peut blesser.

- Utiliser l'anneau de levage uniquement pour soulever l'appareil, NON PAS les chariots, les bouteilles de gaz ou tout autre accessoire.
- Utiliser un équipement de levage de capacité suffisante pour lever l'appareil.
- En utilisant des fourches de levage pour déplacer l'unité, s'assurer que les fourches sont suffisamment longues pour dépasser du côté opposé de l'appareil.



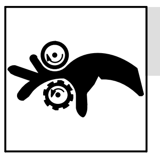
L'EMPLOI EXCESSIF peut SURCHAUFFER L'ÉQUIPEMENT.

- Prévoir une période de refroidissement ; respecter le cycle opératoire nominal.
- Réduire le courant ou le facteur de marche avant de poursuivre le soudage.
- Ne pas obstruer les passages d'air du poste.



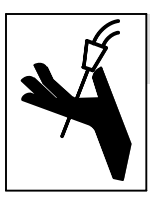
LES CHARGES ÉLECTROSTATIQUES peuvent endommager les circuits imprimés.

- Établir la connexion avec la barrette de terre avant de manipuler des cartes ou des pièces.
- Utiliser des pochettes et des boîtes antistatiques pour stocker, déplacer ou expédier des cartes PC.



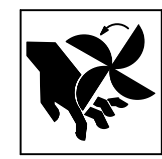
DES ORGANES MOBILES peuvent provoquer des blessures.

- Ne pas s'approcher des organes mobiles.
- Ne pas s'approcher des points de coincement tels que des rouleaux de commande.



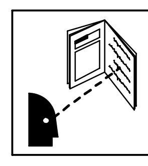
LES FILS DE SOUDAGE peuvent provoquer des blessures.

- Ne pas appuyer sur la gâchette avant d'en avoir reçu l'instruction.
- Ne pas diriger le pistolet vers soi, d'autres personnes ou toute pièce mécanique en engageant le fil de soudage.



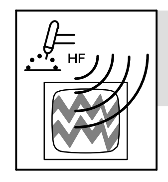
DES ORGANES MOBILES peuvent provoquer des blessures.

- S'abstenir de toucher des organes mobiles tels que des ventilateurs.
- Maintenir fermés et verrouillés les portes, panneaux, recouvrements et dispositifs de protection.
- Seules des personnes qualifiées sont autorisées à enlever les portes, panneaux, recouvrements ou dispositifs de protection pour l'entretien.
- Remettre les portes, panneaux, recouvrements ou dispositifs de protection quand l'entretien est terminé et avant de rebrancher l'alimentation électrique.



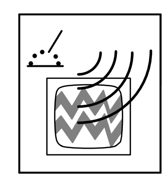
LIRE LES INSTRUCTIONS.

- Lire le manuel d'utilisation avant d'utiliser ou d'intervenir sur l'appareil.
- Utiliser uniquement des pièces de rechange Miller/Hobart.



LE RAYONNEMENT HAUTE FRÉQUENCE (HF) risque de provoquer des interférences.

- Le rayonnement haute fréquence (HF) peut provoquer des interférences avec les équipements de radio-navigation et de communication, les services de sécurité et les ordinateurs.
- Demander seulement à des personnes qualifiées familiarisées avec des équipements électroniques de faire fonctionner l'installation.
- L'utilisateur est tenu de faire corriger rapidement par un électricien qualifié les interférences résultant de l'installation.
- Si le FCC signale des interférences, arrêter immédiatement l'appareil.
- Effectuer régulièrement le contrôle et l'entretien de l'installation.
- Maintenir soigneusement fermés les portes et les panneaux des sources de haute fréquence, maintenir les éclateurs à une distance correcte et utiliser une terre et un blindage pour réduire les interférences éventuelles.



LE SOUDAGE À L'ARC risque de provoquer des interférences.

- L'énergie électromagnétique peut gêner le fonctionnement d'appareils électroniques comme des ordinateurs et des robots.
- Veiller à ce que tout l'équipement de la zone de soudage soit compatible électromagnétiquement.
- Pour réduire la possibilité d'interférence, maintenir les câbles de soudage aussi courts que possible, les grouper, et les poser aussi bas que possible (ex. par terre).
- Veiller à souder à une distance de 100 mètres de tout équipement électronique sensible.
- Veiller à ce que ce poste de soudage soit posé et mis à la terre conformément à ce mode d'emploi.
- En cas d'interférences après avoir pris les mesures précédentes, il incombe à l'utilisateur de prendre des mesures supplémentaires telles que le déplacement du poste, l'utilisation de câbles blindés, l'utilisation de filtres de ligne ou la pose de protecteurs dans la zone de travail.

2-4. Proposition californienne 65 Avertissements

▲ **Les équipements de soudage et de coupage produisent des fumées et des gaz qui contiennent des produits chimiques dont l'État de Californie reconnaît qu'ils provoquent des malformations congénitales et, dans certains cas, des cancers. (Code de santé et de sécurité de Californie, chapitre 25249.5 et suivants)**

▲ **Les batteries, les bornes et autres accessoires contiennent du plomb et des composés à base de plomb, produits chimiques dont l'État de Californie reconnaît qu'ils provoquent des cancers et des malformations congénitales ou autres problèmes de procréation. Se laver les mains après manipulation.**

Pour les moteurs à essence :

▲ **Les gaz d'échappement des moteurs contiennent des produits chimiques dont l'État de Californie reconnaît qu'ils provoquent des cancers et des malformations congénitales ou autres problèmes de procréation.**

Pour les moteurs diesel :

▲ **Les gaz d'échappement des moteurs diesel et certains de leurs composants sont reconnus par l'État de Californie comme provoquant des cancers et des malformations congénitales ou autres problèmes de procréation.**

2-5. Principales normes de sécurité

Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1, de Global Engineering Documents (téléphone : 1-877-413-5184, site Internet : www.global.ihs.com).

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping, American Welding Society Standard AWS F4.1 de Global Engineering Documents (téléphone : 1-877-413-5184, site Internet : www.global.ihs.com).

National Electrical Code, NFPA Standard 70, de National Fire Protection Association, P.O. Box 9101, 1 Battery March Park, Quincy, MA 02269-9101 (téléphone : 617-770-3000, site Internet : www.nfpa.org).

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, de Compressed Gas Association, 1735 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102 (téléphone : 703-412-0900, site Internet : www.cganet.com).

Code for Safety in Welding and Cutting, CSA Standard W117.2, de Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3 (téléphone : 800-463-6727 ou à Toronto 416-747-4044, site Internet : www.csa-international.org).

Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, de American National Standards Institute, 11 West 42nd Street, New York, NY 10036-8002 (téléphone : 212-642-4900, site Internet : www.ansi.org).

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B, de National Fire Protection Association, P.O. Box 9101, 1 Battery March Park, Quincy, MA 02269-9101 (téléphone : 617-770-3000, site Internet : www.nfpa.org).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart Q, and Part 1926, Subpart J, de U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250 (il y a 10 bureaux régionaux−−le téléphone de la région 5, Chicago, est 312-353-2220, site Internet : www.osha.gov).

2-6. Information EMF

Considérations sur le soudage et les effets de basse fréquence et des champs magnétiques et électriques.

Le courant de soudage, pendant son passage dans les câbles de soudage, causera des champs électromagnétiques. Il y a eu et il y a encore un certain souci à propos de tels champs. Cependant, après avoir examiné plus de 500 études qui ont été faites pendant une période de recherche de 17 ans, un comité spécial ruban bleu du National Research Council a conclu : « L'accumulation de preuves, suivant le jugement du comité, n'a pas démontré que l'exposition aux champs magnétiques et champs électriques à haute fréquence représente un risque à la santé humaine ». Toutefois, des études sont toujours en cours et les preuves continuent à être examinées. En attendant que les conclusions finales de la recherche soient établies, il vous serait souhaitable de réduire votre exposition aux champs électromagnétiques pendant le soudage ou le coupage.

Pour réduire les champs magnétiques sur le poste de travail, appliquer les procédures suivantes :

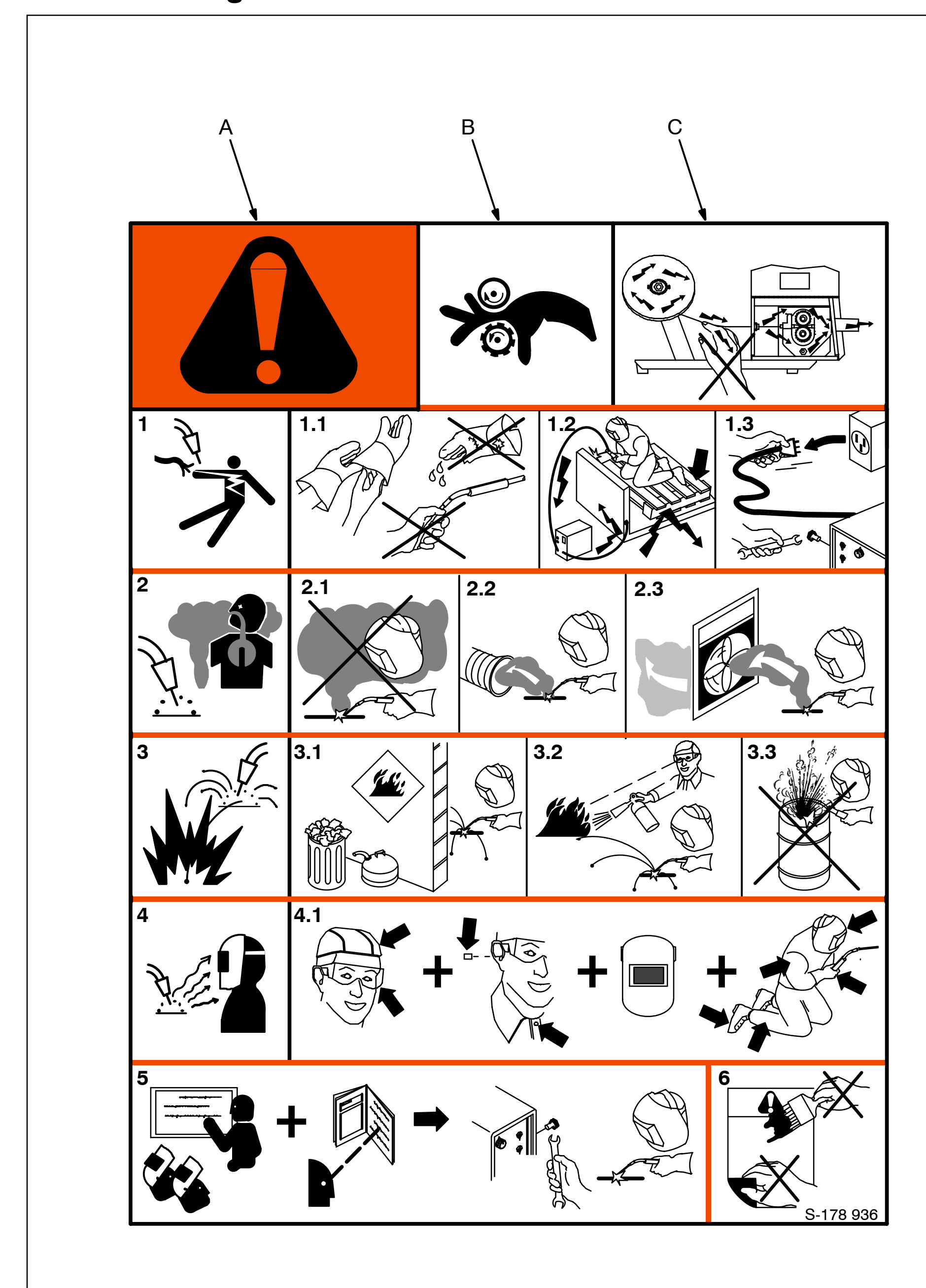
1. Maintenir les câbles ensemble en les tordant ou en les enveloppant.
2. Disposer les câbles d'un côté et à distance de l'opérateur.
3. Ne pas courber pas et ne pas entourer pas les câbles autour de votre corps.
4. Garder le poste de soudage et les câbles le plus loin possible de vous.
5. Connecter la pince sur la pièce aussi près que possible de la soudure.

En ce qui concerne les stimulateurs cardiaques

Les porteurs de stimulateur cardiaque doivent consulter leur médecin avant de souder ou d'approcher des opérations de soudage. Si le médecin approuve, il est recommandé de suivre les procédures précédentes.

SECTION 3 – DEFINITIONS

3-1. Warning Label Definitions



A. Warning! Watch Out! There are possible hazards as shown by the symbols.

B. Drive rolls can injure fingers.

C. Welding wire and drive parts are at welding voltage during operation – keep hands and metal objects clear.

1 Electric shock can kill.

1.1 Wear dry insulating gloves. Do not touch electrode with bare hand. Do not wear wet or damaged gloves.

1.2 Protect yourself from electric shock by insulating yourself from work and ground.

1.3 Disconnect input plug or power before working on machine.

2 Breathing welding fumes can be hazardous to your health.

2.1 Keep your head out of the fumes.

2.2 Use forced ventilation or local exhaust to remove the fumes.

2.3 Use ventilating fan to remove fumes.

3 Welding sparks can cause explosion or fire.

3.1 Keep flammables away from welding. Don't weld near flammables.

3.2 Welding sparks can cause fires. Have a fire extinguisher nearby and have a watch person ready to use it.

3.3 Do not weld on drums or any closed containers.

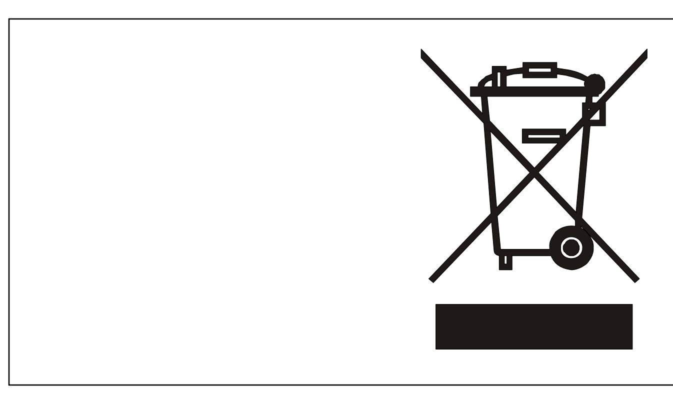
4 Arc rays can burn eyes and injure skin.

4.1 Wear hat and safety glasses. Use ear protection and button shirt collar. Use welding helmet with correct shade of filter. Wear complete body protection.

5 Become trained and read the instructions before working on the machine or welding.

6 Do not remove or paint over (cover) the label.

3-2. WEEE Label



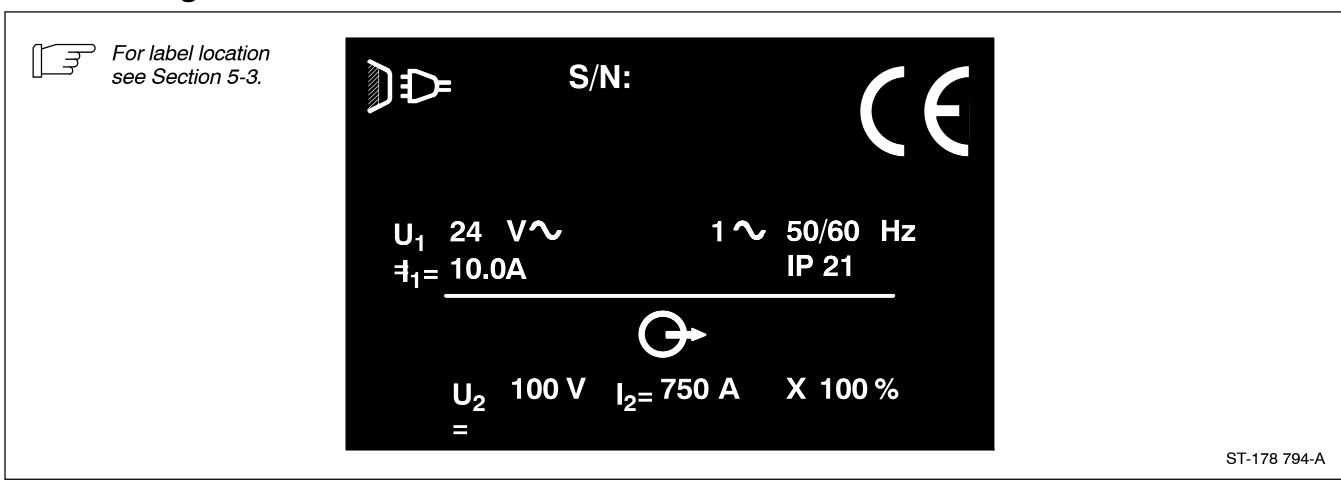
Do not discard this product with general waste.

Reuse or recycle Waste Electrical and Electronic Equipment (WEEE) by disposing at a designated collection facility.

Contact your local recycling office or your local distributor for further information.

3-3. Rating Label For CE Products

For label location see Section 5-3.



ST-178 794-A

3-4. Symbols And Definitions

Note *Some symbols are found only on CE products.*

A	Amperes	V	Volts	∿	Alternating Current	X	Duty Cycle
IP	Degree Of Protection	Hz	Hertz		Program		Wire Feed
	Jog		Output		Trigger		Line Connection
	Set Up		Sequence		Trigger Hold On		Trigger Hold Off
	Purge		Press To Set		Start		Crater
t	Time	t_1	Preflow Time	t_2	Postflow Time		Read Instructions
	Increase	I_1	Primary Current	I_2	Rated Current	U_2	Load Voltage
U_1	Primary Voltage	A B	Dual Schedule				

SECTION 4 – INTRODUCTION

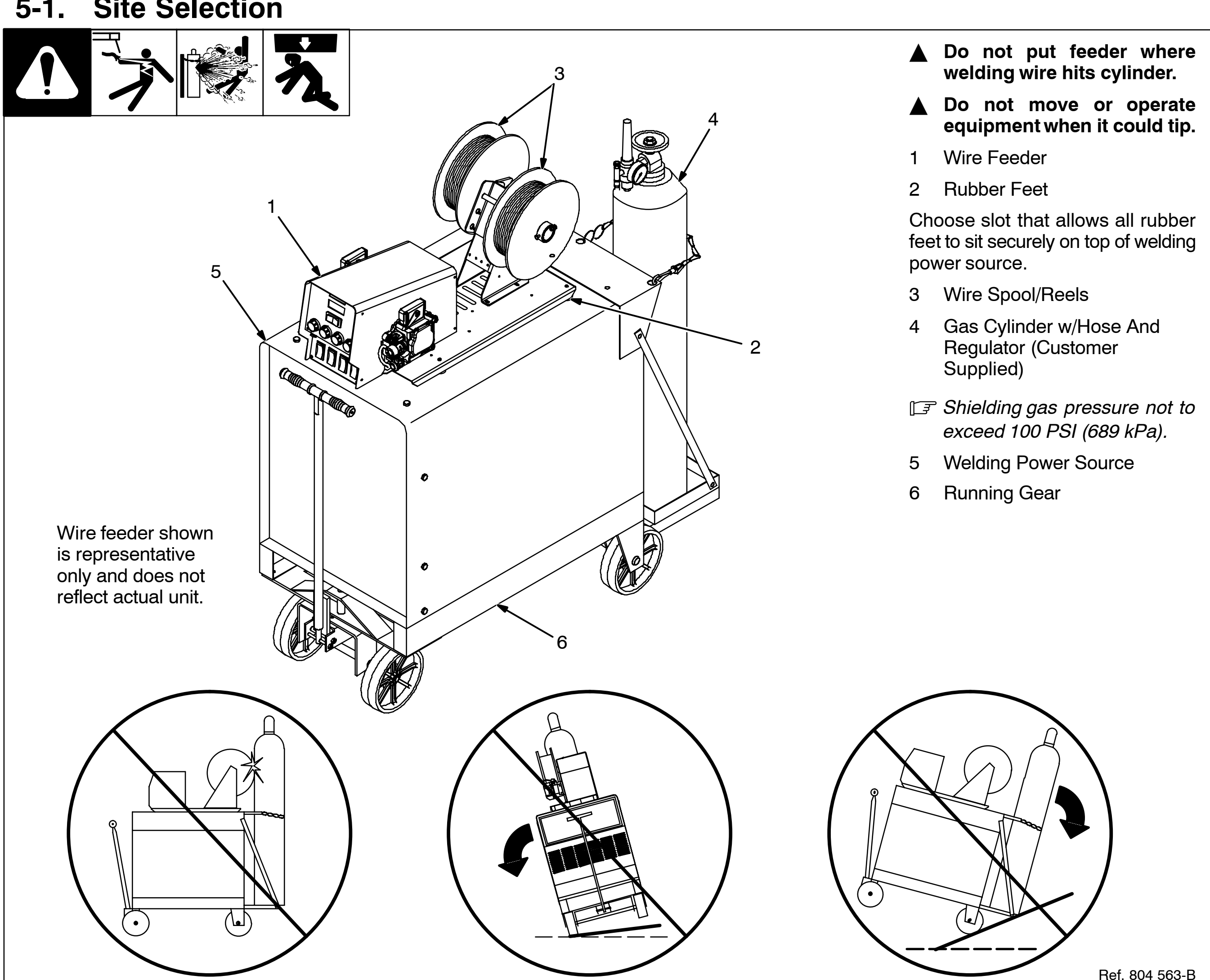
4-1. Specifications

Type of Input Power	Welding Power Source Type	Welding Circuit Rating	IP Rating	Overall Dimensions	Maximum Spool Weight	Wire Feed Speed Range	Wire Diameter Range	Weight
24 Volts ac Single-Phase 10 Amperes 50/60 Hertz	Constant Voltage (CV) DC With 14-Pin, that Provides Voltage and Current Feedback	100 Volts, 750 Amperes, 100% Duty Cycle	IP 21	Length: 35 in (889 mm) Width: 21.5 in (546 mm) Height: 14 in (356 mm)	60 lb (27 kg)	Standard Speed: 50 to 1400 ipm (1.3 to 35.6 mpm)	.023 to 5/64 in (0.6 to 2.0 mm)	83 lb (37.6 kg)
						Low Speed: 20 to 400 ipm (0.5 to 10.1 mpm)	.023 to 1/8 in (0.6 to 3.2 mm)	93 lb (42.2 kg)

NOTE ☞ *If feeder is used with a welding power source that does not provide voltage and current feedback through the 14-pin control cable, run-in will be disabled. Arc voltage will not be displayed on feeders equipped with meters.*

SECTION 5 – INSTALLATION

5-1. Site Selection



▲ **Do not put feeder where welding wire hits cylinder.**

▲ **Do not move or operate equipment when it could tip.**

1 Wire Feeder

2 Rubber Feet

Choose slot that allows all rubber feet to sit securely on top of welding power source.

3 Wire Spool/Reels

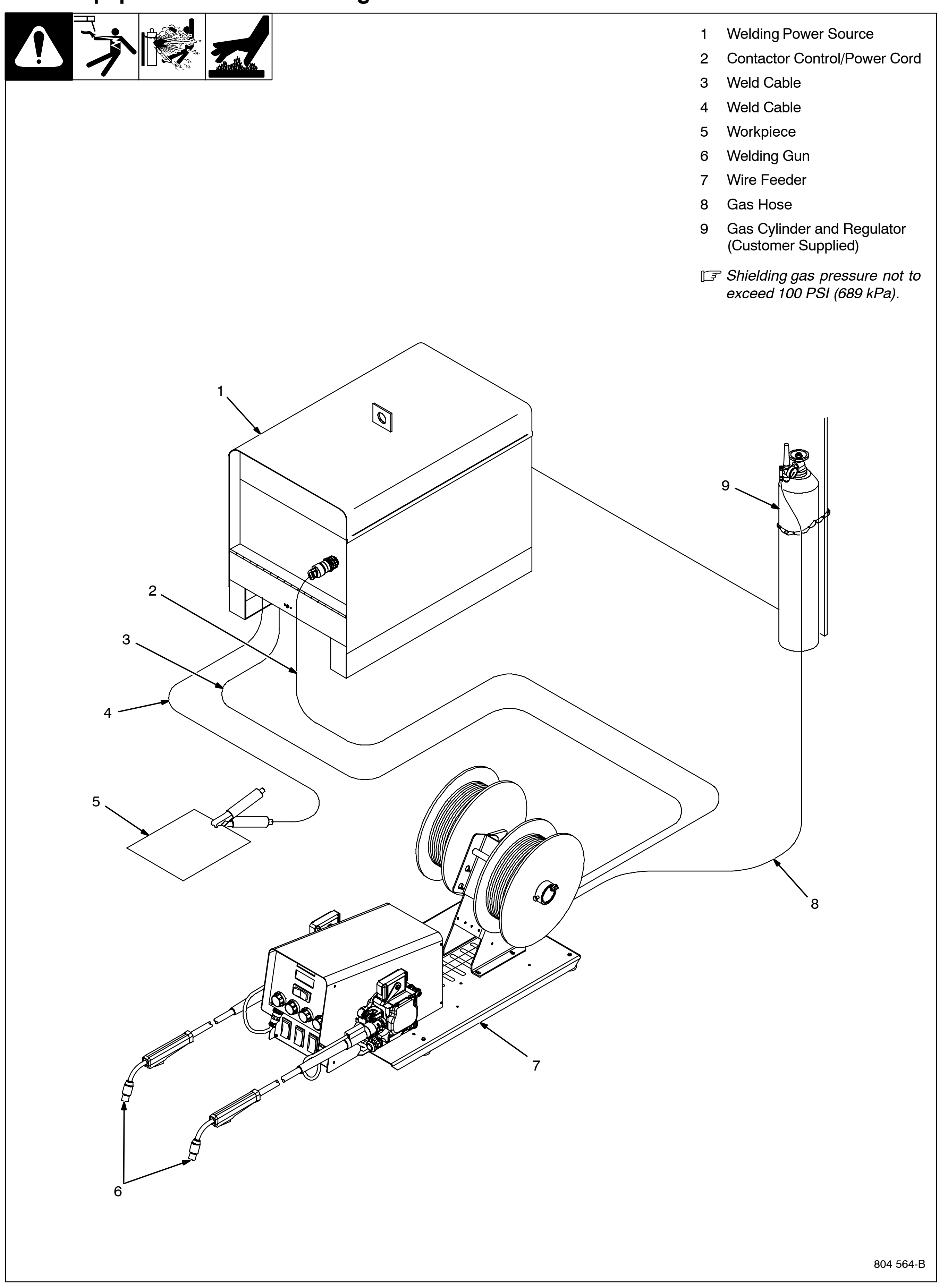
4 Gas Cylinder w/Hose And Regulator (Customer Supplied)

☞ *Shielding gas pressure not to exceed 100 PSI (689 kPa).*

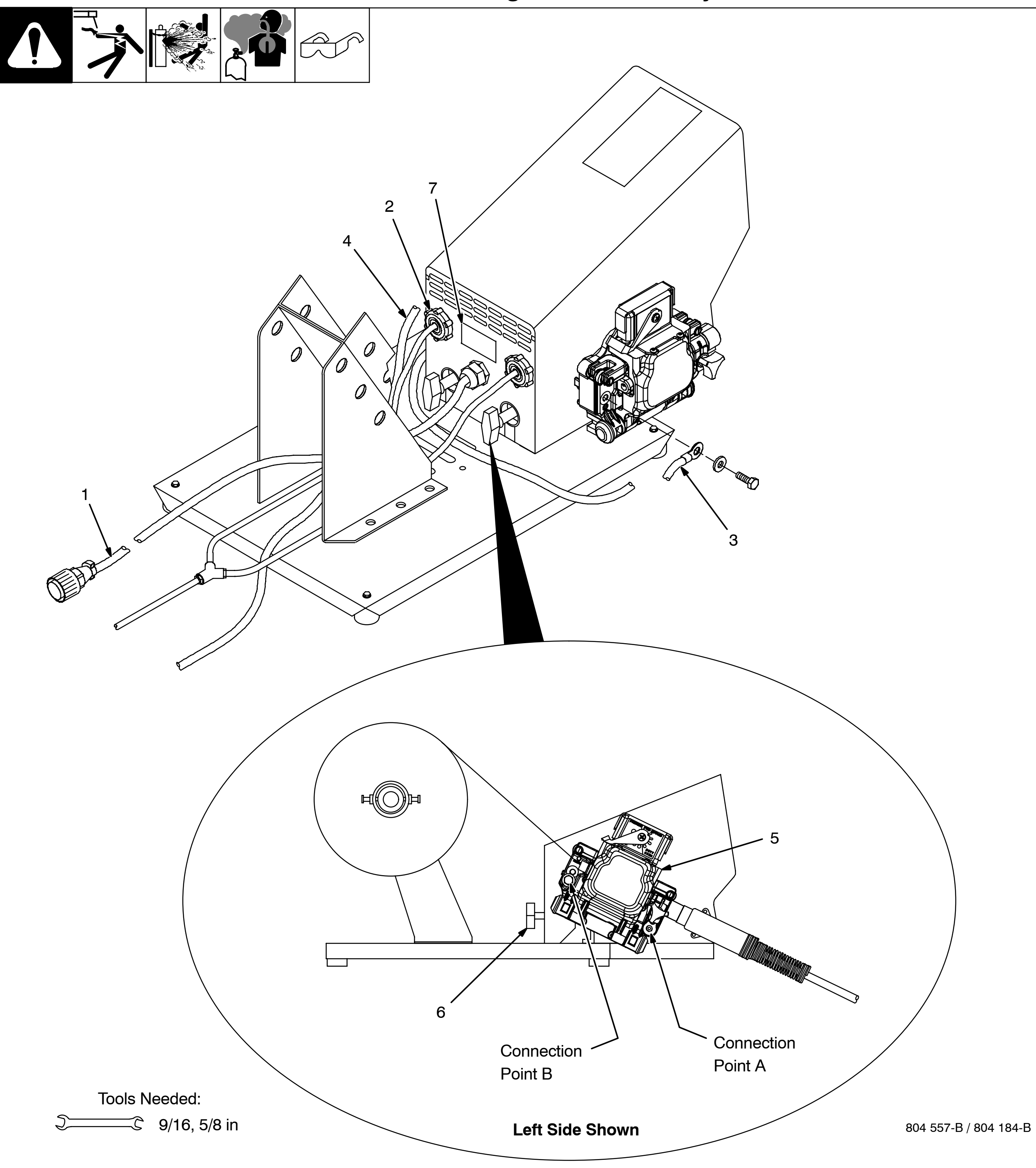
5 Welding Power Source

6 Running Gear

5-2. Equipment Connection Diagrams



5-3. Rear Panel Connections And Rotating Drive Assembly



1 14-Pin Control Cable - 10 Ft (3.0 m)

2 Shielding Gas Valve Fittings

Requires fitting with 5/8-18 right-hand threads. Connect customer-supplied gas hose.

3 Jumper Weld Cable

☞ *If welding at 350 amps or less, connect jumper weld cable to connection point B. Route cable around back of feeder. (See illustration).*

☞ *If welding at 350 amps or more, connect jumper weld cable to connection point A. Route cable around front of feeder.*

Left side of drive assembly has a screw to secure jumper weld cable at connection point B. To move jumper weld cable to connection point A remove screw from point B to use in point A.

Right side of drive assembly has screws to secure jumper weld cable and weld cable to connection points A and B.

4 Weld Cable

Connect weld cable to connection point A on right side of drive assembly.

5 Drive Assembly

6 Drive Assembly Rotation Knob

To rotate the drive assembly, loosen drive assembly rotation knob, rotate drive assembly, and tighten knob.

7 Rating Label Location

5-4. 14-Pin Plug Information

REMOTE 14	Pin*	Pin Information
	A	24 volts ac with respect to socket G.
	B	Contact closure to A completes 24 volts ac contactor control circuit.
	G	Circuit common for 24 volts ac circuit.
	C	+10 volts dc input from power source to wire feeder with respect to socket D.
	D	Remote control circuit common.
	E	0 to +10 volts dc output signal from wire feeder to power source with respect to socket D.
	H	Voltage feedback; 0 to +10 volts dc, 1 volt per 10 arc volts.
	F	Current feedback; 0 to +10 volts dc, 1 volt per 100 amperes.

*The remaining pins are not used.

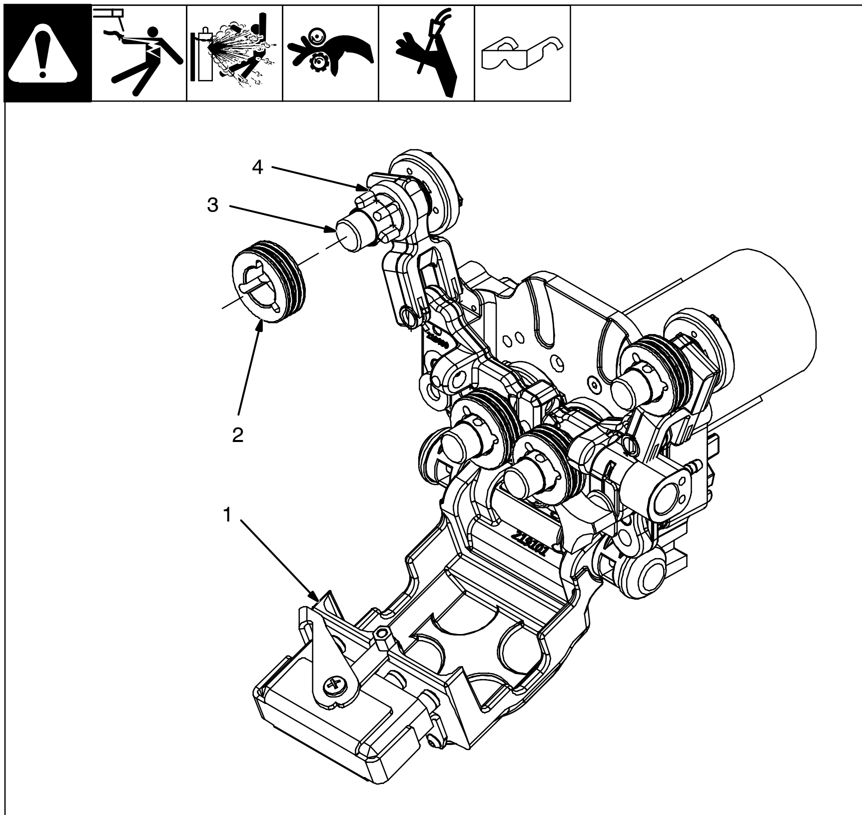
5-5. Gun Recommendation Table

Process	Gun
GMAW – Hard or Cored Wires	Q-Series Guns: 300, 400, 500, And 600 Amp.
FCAW – Self-Shielding Wires	FC-1260 Or FC-1150

5-6. Wire Type, Size, And Feed Speed Capability Table

Motor Speed	Wire Type	Wire Size	Feed Speed Capability
Standard	All	.023 To 5/64 in (0.6 To 2 mm)	50 To 1400 ipm (1.3 To 35.6 mpm)
Low	All	.023 To 1/8 in (0.6 To 3.2 mm)	20 To 400 ipm (0.5 To 10.1 mpm)

5-7. Installing Drive Rolls



1 Pressure Door Assembly
2 Drive Roll
3 Ejector Button
4 Drive Roll Carrier

Installation

Open pressure door assembly.

Lift drive roll swing arm.

Align drive roll slots with three lobes on drive roll carrier.

Insert drive roll onto carrier. Drive roll will snap into place.

When closing swing arm, push firmly into position.

Swing arm has built in resistance to prevent swing arm from closing abruptly.

☞ *When using cored welding wire use knurled drive rolls.*

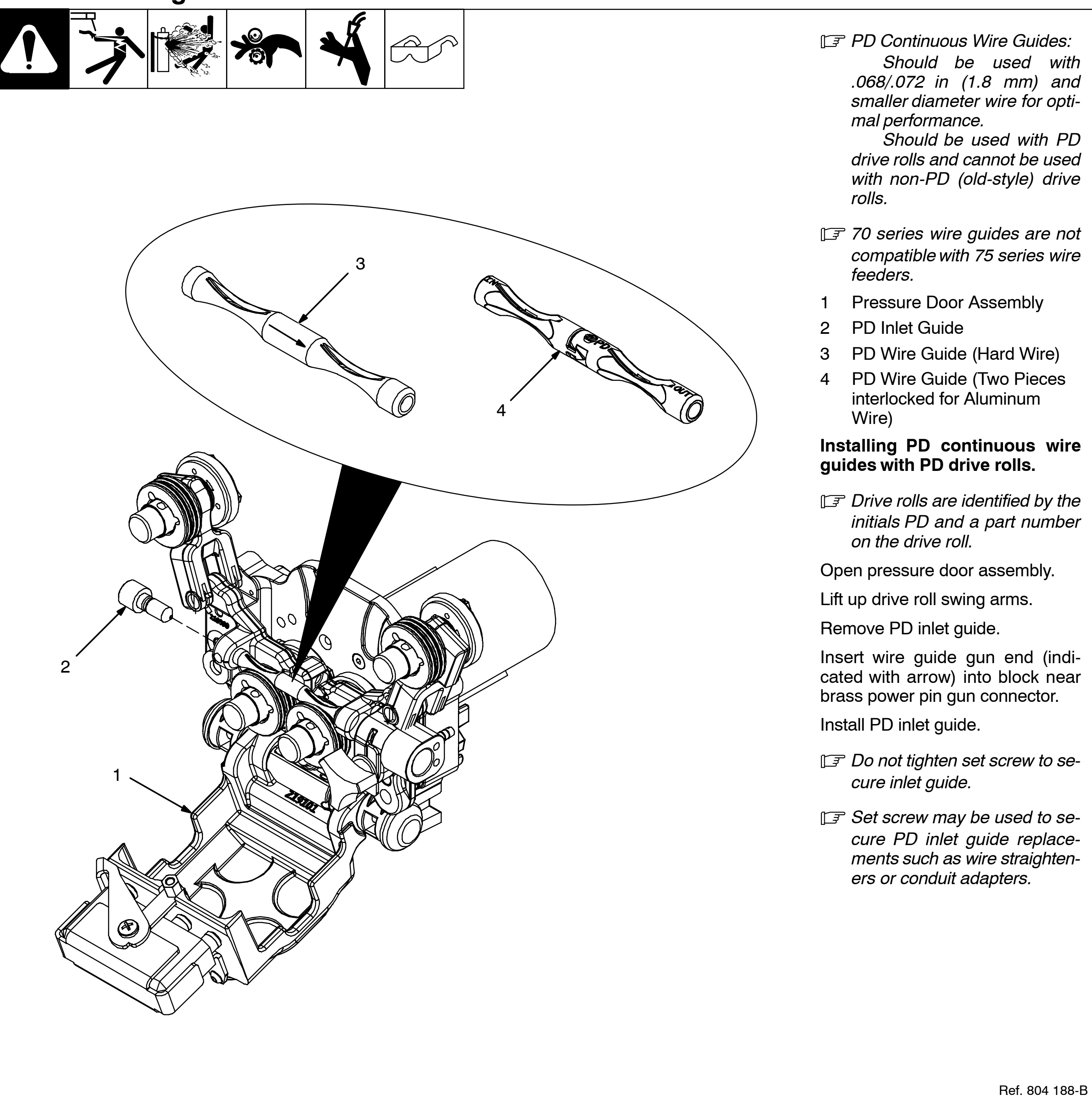
Removal

☞ *Remove PD wire guide before removing lower drive rolls.*

Lift up drive roll swing arm and press ejector button in middle of drive roll carrier.

804 187-B

5-8. Installing PD Continuous Wire Guides



☞ *PD Continuous Wire Guides:*
Should be used with .068/.072 in (1.8 mm) and smaller diameter wire for optimal performance.
Should be used with PD drive rolls and cannot be used with non-PD (old-style) drive rolls.

☞ *70 series wire guides are not compatible with 75 series wire feeders.*

1 Pressure Door Assembly
2 PD Inlet Guide
3 PD Wire Guide (Hard Wire)
4 PD Wire Guide (Two Pieces interlocked for Aluminum Wire)

Installing PD continuous wire guides with PD drive rolls.

☞ *Drive rolls are identified by the initials PD and a part number on the drive roll.*

Open pressure door assembly.

Lift up drive roll swing arms.

Remove PD inlet guide.

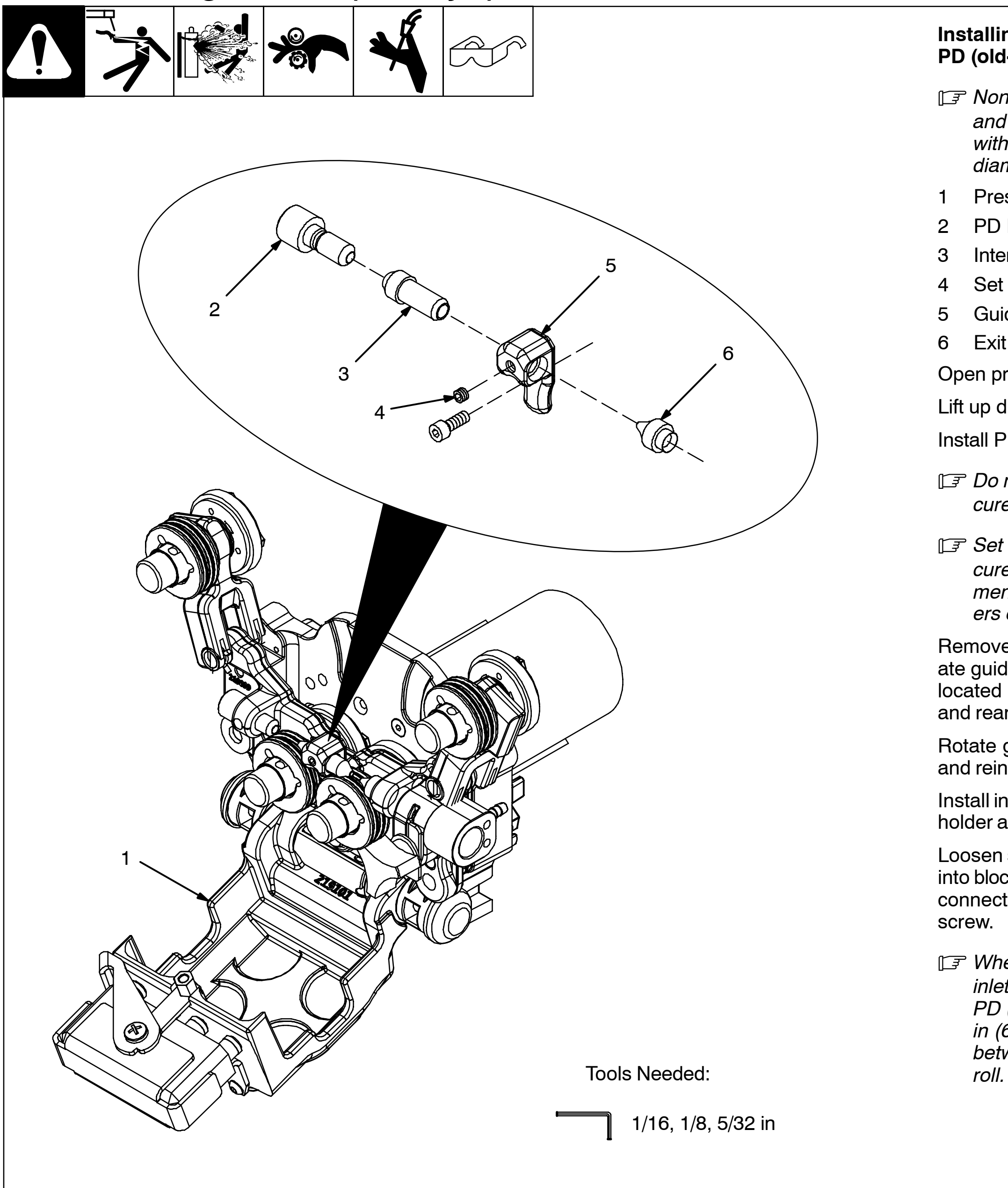
Insert wire guide gun end (indicated with arrow) into block near brass power pin gun connector.

Install PD inlet guide.

☞ *Do not tighten set screw to secure inlet guide.*

☞ *Set screw may be used to secure PD inlet guide replacements such as wire straighteners or conduit adapters.*

5-9. Installing Non-PD (Old Style) Wire Guides



Installing wire guides with non-PD (old-style) drive rolls

☞ *Non-PD (old-style) wire guides and drive rolls should be used with 5/64 in (2.0 mm) and larger diameter wire.*

1 Pressure Door Assembly
2 PD Inlet Guide
3 Intermediate Guide
4 Set Screw
5 Guide Holder
6 Exit Guide

Open pressure door assembly.

Lift up drive roll swing arms.

Install PD inlet guide.

☞ *Do not tighten set screw to secure inlet guide.*

☞ *Set screw may be used to secure PD inlet guide replacements such as wire straighteners or conduit adapters.*

Remove screw securing intermediate guide holder. (Guide holder is located between the lower front and rear drive roll carriers.)

Rotate guide holder 180 degrees and reinstall.

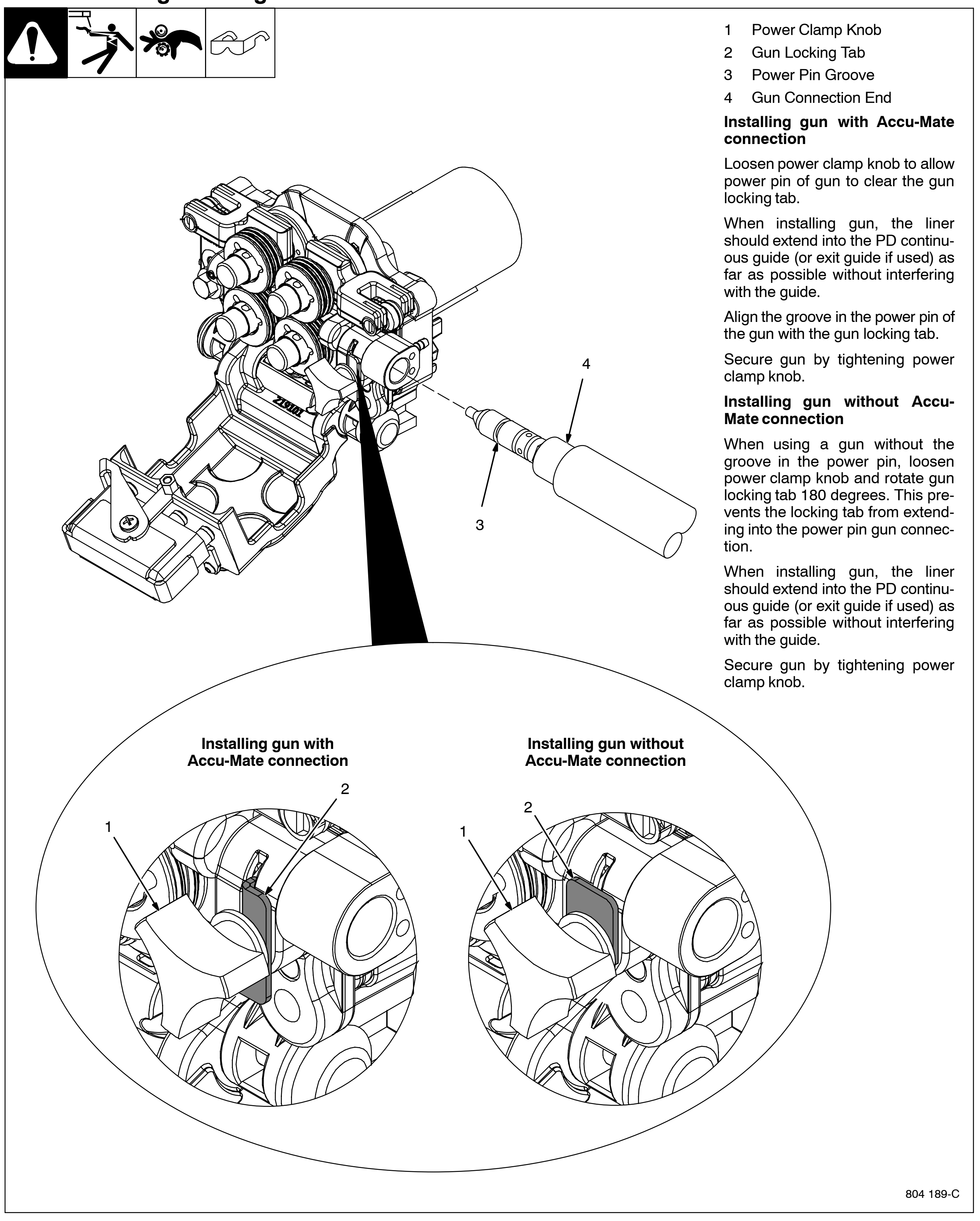
Install intermediate guide into guide holder and tighten set screw.

Loosen set screw, insert exit guide into block near brass power pin gun connection and secure with set screw.

☞ *When using smaller diameter inlet guide (219108) with non-PD (old style) drive rolls, a 1/4 in (6 mm) gap will be present between the guide and drive roll.*

Ref. 804 192-C

5-10. Installing Welding Gun



1 Power Clamp Knob
2 Gun Locking Tab
3 Power Pin Groove
4 Gun Connection End

Installing gun with Accu-Mate connection

Loosen power clamp knob to allow power pin of gun to clear the gun locking tab.

When installing gun, the liner should extend into the PD continuous guide (or exit guide if used) as far as possible without interfering with the guide.

Align the groove in the power pin of the gun with the gun locking tab.

Secure gun by tightening power clamp knob.

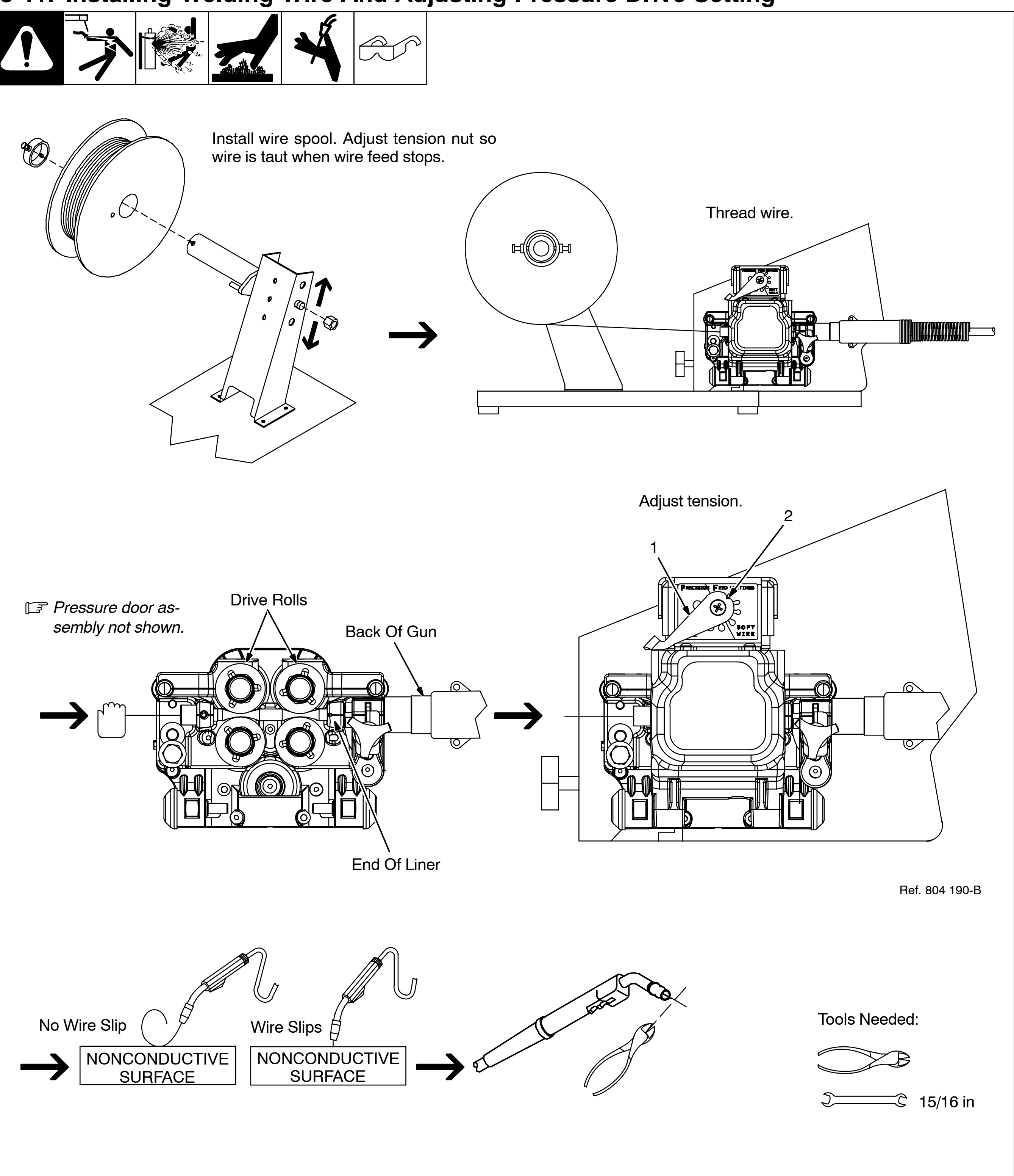
Installing gun without Accu-Mate connection

When using a gun without the groove in the power pin, loosen power clamp knob and rotate gun locking tab 180 degrees. This prevents the locking tab from extending into the power pin gun connection.

When installing gun, the liner should extend into the PD continuous guide (or exit guide if used) as far as possible without interfering with the guide.

Secure gun by tightening power clamp knob.

5-11. Installing Welding Wire And Adjusting Pressure Drive Setting



1 Drive Roll Pressure Adjustment Lever

2 Notch In Lever (Indicates Pressure Settings)

Pressure drive settings range from 1 to 8 with 8 being the maximum setting.

☞ *When using cored welding wire use knurled drive rolls.*

☞ *For aluminum (soft) wire set pressure drive setting at 4 or below.*

☞ *Be sure that gun has proper size liner for the welding wire size.*

When installing gun, the liner should extend into the PD continuous guide (or exit guide if used) as far as possible without interfering with the guide.

Install gun. Lay gun cable out straight. Cut off end of wire. Push wire through guide up to drive rolls; continue to hold wire. Press Jog button to feed wire out gun.

To adjust drive roll pressure, hold nozzle about 2 in (51 mm) from nonconductive surface and press gun trigger to feed wire against surface. Adjust pressure drive lever so wire does not slip. Do not overtighten. If contact tip is completely blocked, wire should slip at the feeder (see pressure adjustment above.)

Cut wire off.

5-12. Motor Board DIP Switch Settings

Left Side Motor Control Board PC101

Right Side Motor Control Board PC1

P1

This illustration shows the factory setting of S1.

1

☞ *In the DIP switch S1 illustrations, the elevated slider on each switch is shown in white. For example, the switches above are all in the Off position.*

Remove wrapper.

1 DIP Switch S1 On Motor Board PC1 and PC101

S1-1

Run-In enable or disable.

S1-2

Automatic Run-In versus Manual Adjustment Run-in

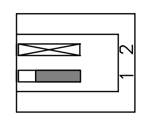
Install wrapper when finished.

Tools Needed:

1/4 in

Position Settings And Results For DIP Switch S1 On PC1 And PC101

Run-In Enabled (Factory Default)

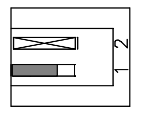


S1-1

Run-In feature is available.
X - *Means switch may be in either position.*

☞ *If 14 pin power cable from power source does not provide voltage and current feedback, Run-In will automatically disable.*

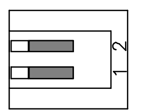
Run-In Disabled



S1-1

Run-In feature is not available. X - *Means switch may be in either position.*

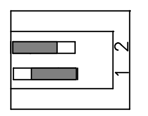
Automatic Run-In (Factory Default)



S1-1 And S1-2

Run-In speed is approximately 1/2 weld wire feed speed.

Manually Adjusted Run-In



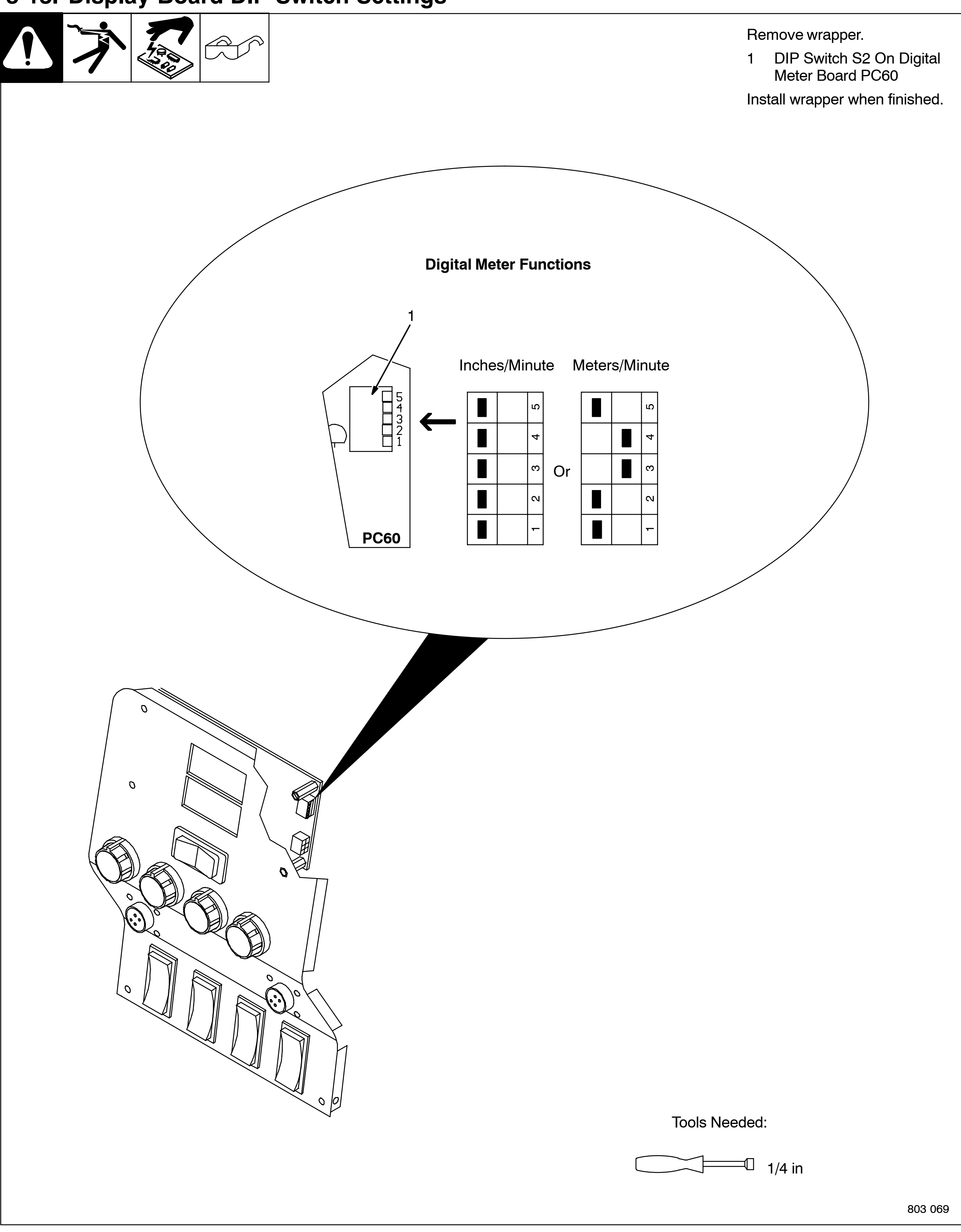
S1-1 And S1-2

Run-In speed is set using potentiometer P1 located on Motor Board PC1.

☞ *P1 is a 25 turn potentiometer.*

803 063 / Ref. 802 944

5-13. Display Board DIP Switch Settings



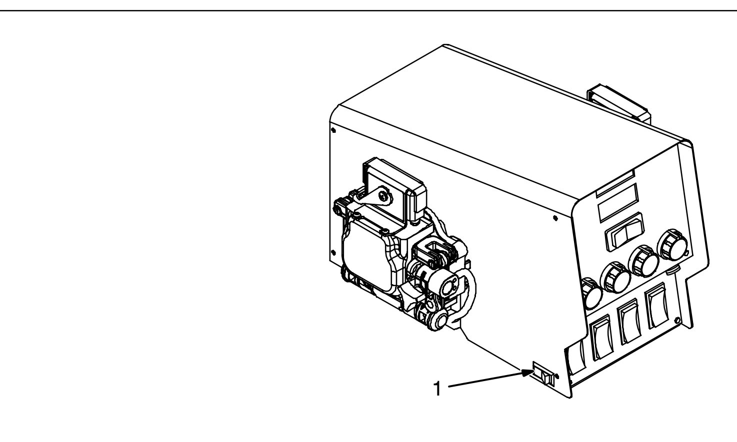
Remove wrapper.

1 DIP Switch S2 On Digital Meter Board PC60

Install wrapper when finished.

SECTION 6 – OPERATION

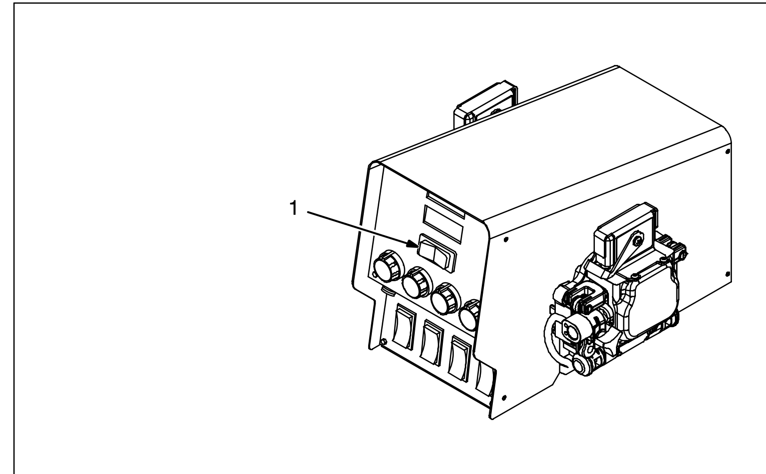
6-1. Power Switch



1 Power Switch

Ref. 804 567-B

6-2. Left/Right Select Switch

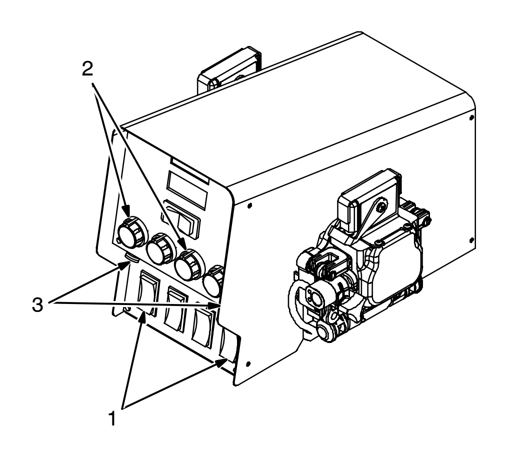


1 Left/Right Select Switch

Pressing the Left/Right Select switch allows the operator to choose which side of the unit's controls will operate.

Ref. 804 568-B

6-3. Jog/Purge



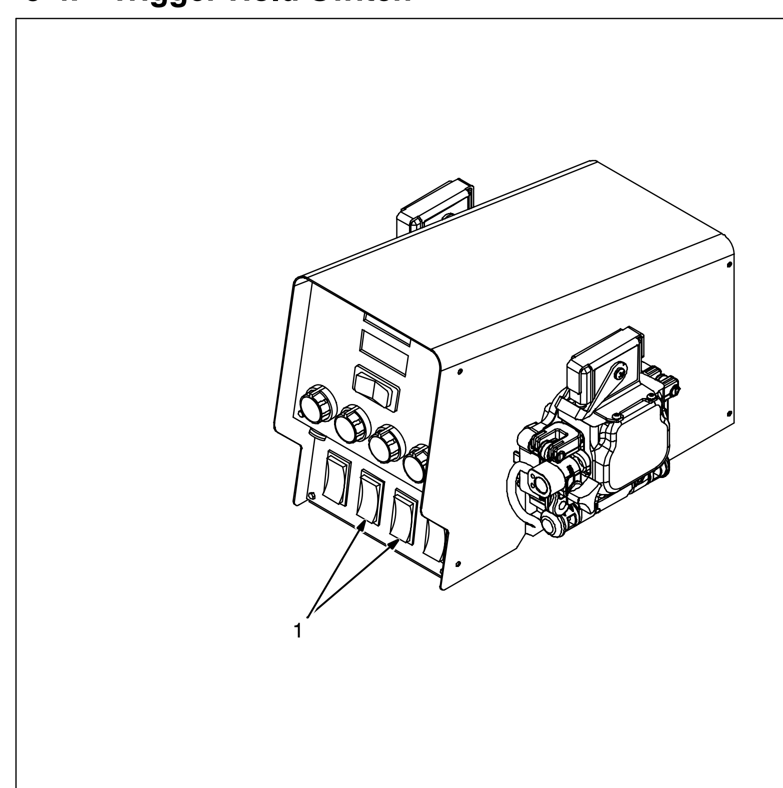
1 Jog/Purge Push Buttons
2 Wire Speed Controls
3 Gun Trigger Receptacles

Ref. 804 568-B

Pressing the Jog/Purge switch allows the operator to jog wire without energizing the weld power or gas valve circuit.

- Jog speed can be adjusted with the Wire Speed control when the unit is jogging wire. If equipped with meters, the unit displays jog speed while the unit is being jogged.
- Pressing the Jog/Purge button also allows the operator to purge gas lines before welding and to preset gas pressure at the regulator.

6-4. Trigger Hold Switch



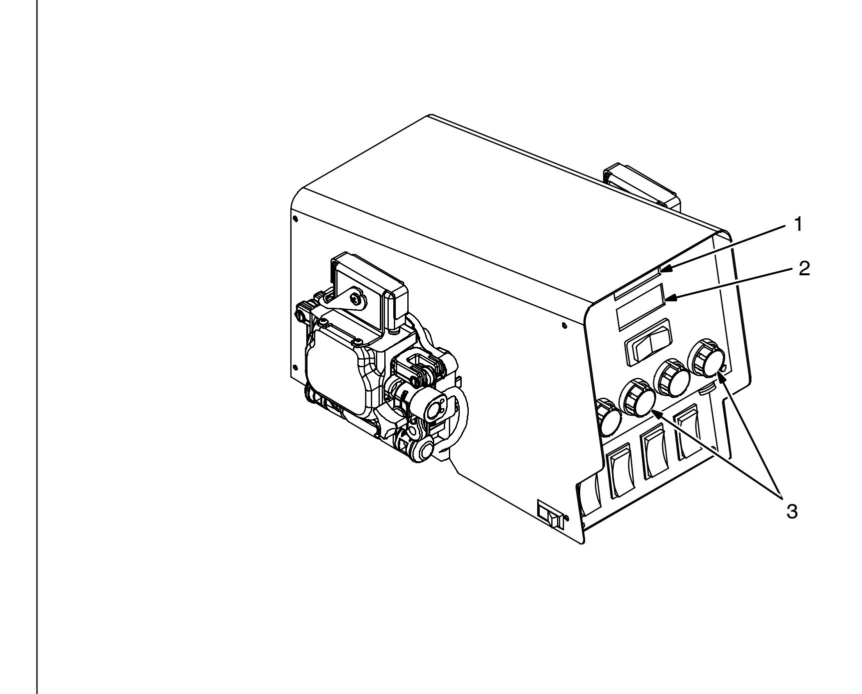
1 Trigger Hold Switches

Trigger hold allows the operator to weld without holding the gun trigger.

- To use the trigger hold function, place the trigger hold switch in the On position.
- The operator must hold the trigger for a minimum of 2 seconds, but not longer than 6 seconds before releasing it. Welding will continue when the trigger is released.
- To stop welding, press the trigger again.

Ref. 804 568-B

6-5. Voltage Control And Digital Meters



1 Voltmeter

Displays actual or preset voltage from welding power source through the 14−pin control cable.

☞ *Voltmeter will not display actual or preset voltage if voltage feedback is not provided through the 14-pin control cable.*

2 Wire Speed Meter

Displays preset and actual wire feed speed while welding.

Factory set to display inches per minute. If display of meters per minute is desired, see Section 5-12.

3 Voltage Controls

Use controls to adjust voltage output of welding power source.

☞ *You can adjust the preset voltage display on the wire feeder to match your power source's display by adjusting P2 on motor control board PC101 (left side), and/or P2 on motor control board PC1 (right side). See Section 7-3 for location of P2.*

Ref. 804 567-B

SECTION 7 – MAINTENANCE

7-1. Routine Maintenance



▲ **Disconnect power before maintaining.**

	✓ = Check	● = Clean	☆ = Replace		Reference
Every 3 Months	☆ Unreadable Labels	● Weld Terminals	✓☆ Weld Cable	✓☆ Motor Brush	Section 5-2, 5-3
	✓ 14-Pin Cord	✓ Gas Hose and Fittings	✓ Gun Cable		Section 5-2, 5-3
Every 6 Months	● Inside Unit (Or)	● Drive Rolls			Section 5-7

7-2. Brush Inspection And Replacement

▲ **Do not disassemble motor field magnets or injury/equipment damage may occur.**

1 Motor

2 Brush Cap

Remove brush cap.

3 Brush

Replace brush if it becomes chipped or broken, or if less than 1/4 in. (6.4 mm) of brush material remains. Do not include spring boss as part of the 1/4 in. measurement.

Install brush so that curved surface on end of brush matches curve of motor, and secure with cap.

1

3

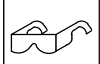
2

Tools Needed:

137 390-B

7-3. Diagnostics

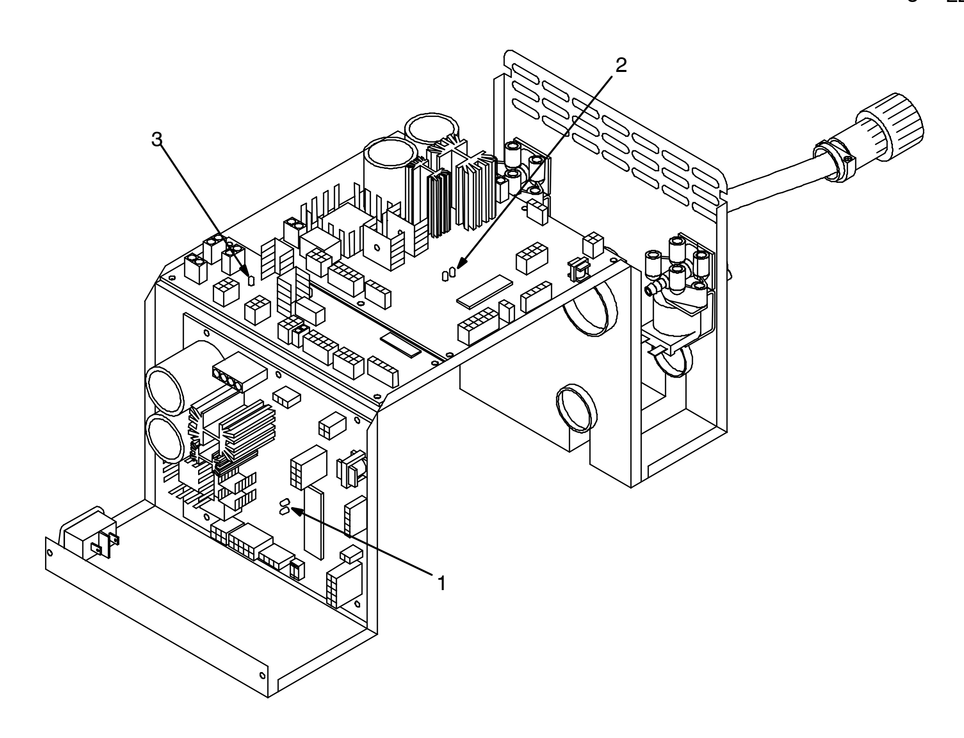


1 LED3 On Right Side Motor Control Board PC1

2 LED3 On Left Side Motor Control Board PC101

3 LED3 On Dual Board PC70



803 063-A

	Display On Optional Meter	LED3 Sequence	Indicated Error
Left Side Motor Control Board PC101	HELP 11	1 Blink	Communication Error
	HELP 12	2 Blinks	Trigger Error
	HELP 13	3 Blinks	Tach Error
	HELP 14	*4 Blinks	Motor Error
Right Side Motor Control Board PC1	HELP 21	1 Blink	Communication Error
	HELP 22	2 Blinks	Trigger Error
	HELP 23	3 Blinks	Tach Error
	HELP 24	*4 Blinks	Motor Error
Dual Board PC70	HELP 31	*4 Blinks	Communication Error
	*Since blink On time and blink Off time are equal in a four-blink cycle, the four−blink sequence appears as constant blinking.		

- **Error Indications**

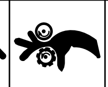
Error conditions are indicated by LED3 on PC1, PC101, PC70 or on display if meter option is present. To view LED3, turn Off unit, remove wrapper, and turn unit On. LED3 is most easily observed from the left side of the unit.

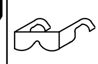
The LED blinks in a 2.5 second cycle. The number of blinks in this period indicates the type of error.

The priority of the errors is related to the number of blinks indicating the error. The more blinks, the more severe the error (motor error is top priority). A higher priority error overrides a lower one (if a motor error and a communication error existed, the light would blink four times for the motor error).

- **The communication error** occurs 2.5 seconds after a loss of communication between the motor and the optional meter board or Dual board. The user may continue to weld with this error. The error may be cleared by turning power Off, waiting a minimum of two seconds, and turning power On.
- **The trigger error** occurs if the user has the trigger held for more than two minutes without striking an arc (providing current override is not enabled), or if the user holds the trigger past the postflow phase in a timed weld. This error also occurs if the trigger is held when the feeder is powered up. The error may be cleared by releasing the trigger.
- **The tach error** occurs 2 seconds after the loss of tachometer feedback. The user may continue to weld with this error. The motor speed is regulated through the monitoring of voltage and current.
- **The motor error** indicates that the motor has been drawing too much current for too long.

7-4. Troubleshooting



▲ **Disconnect power before troubleshooting**

Trouble	Remedy
Wire feeds, shielding gas flows, but electrode wire is not energized.	Check cable connections. Check cables for continuity, and repair or replace cables if necessary (see Section 5-3).
Wire feeder is on, display does not light up, motor does not run, gas valve and welding power source contactor do not pull in.	Check and reset circuit breaker at welding power source.
Electrode wire feeding stops or feeds erratically during welding.	Check gun trigger connection. See gun Owner's Manual.
	Check gun trigger. See gun Owner's Manual.
	Readjust hub tension and drive roll pressure (see Section 5-11).
	Change to correct size drive roll (see Section 5-7 and Table 9-1).
	Clean or replace dirty or worn drive roll.
	Incorrect size or worn wire guides.
	Replace contact tip or liner. See gun Owner's Manual.
	Remove weld spatter or foreign matter from around nozzle opening.
	Check brushes in drive motor. If brush length is less than 1/4 inch, replace brushes.
	Have Factory Authorized Service Agency check drive motor or motor control board PC1.
Motor runs slowly.	Check for correct input voltage.
Wire feeder power is on, displays light up, feeder jogs, purges, but unit is inoperative.	Check welding gun trigger leads for continuity, and repair leads or replace gun.
When triggered wire feeds but no gas, no contactor.	If the welding arc does not establish in 3 seconds after the gun trigger is activated the unit will feed wire, but turns off contactor and gas valve. If the gun trigger is still activated after two minutes, the wire will stop feeding.

SECTION 8 – ELECTRICAL DIAGRAM

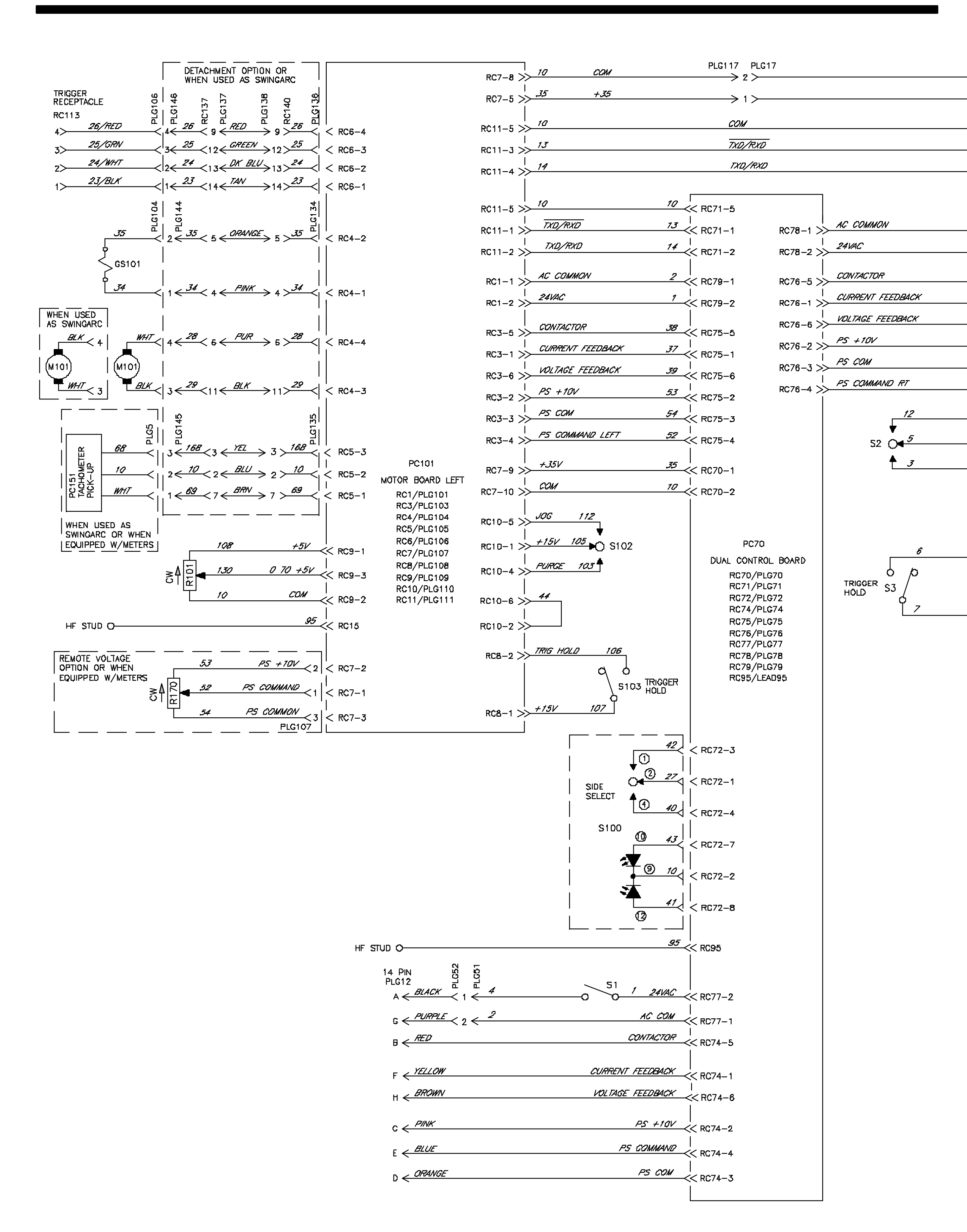
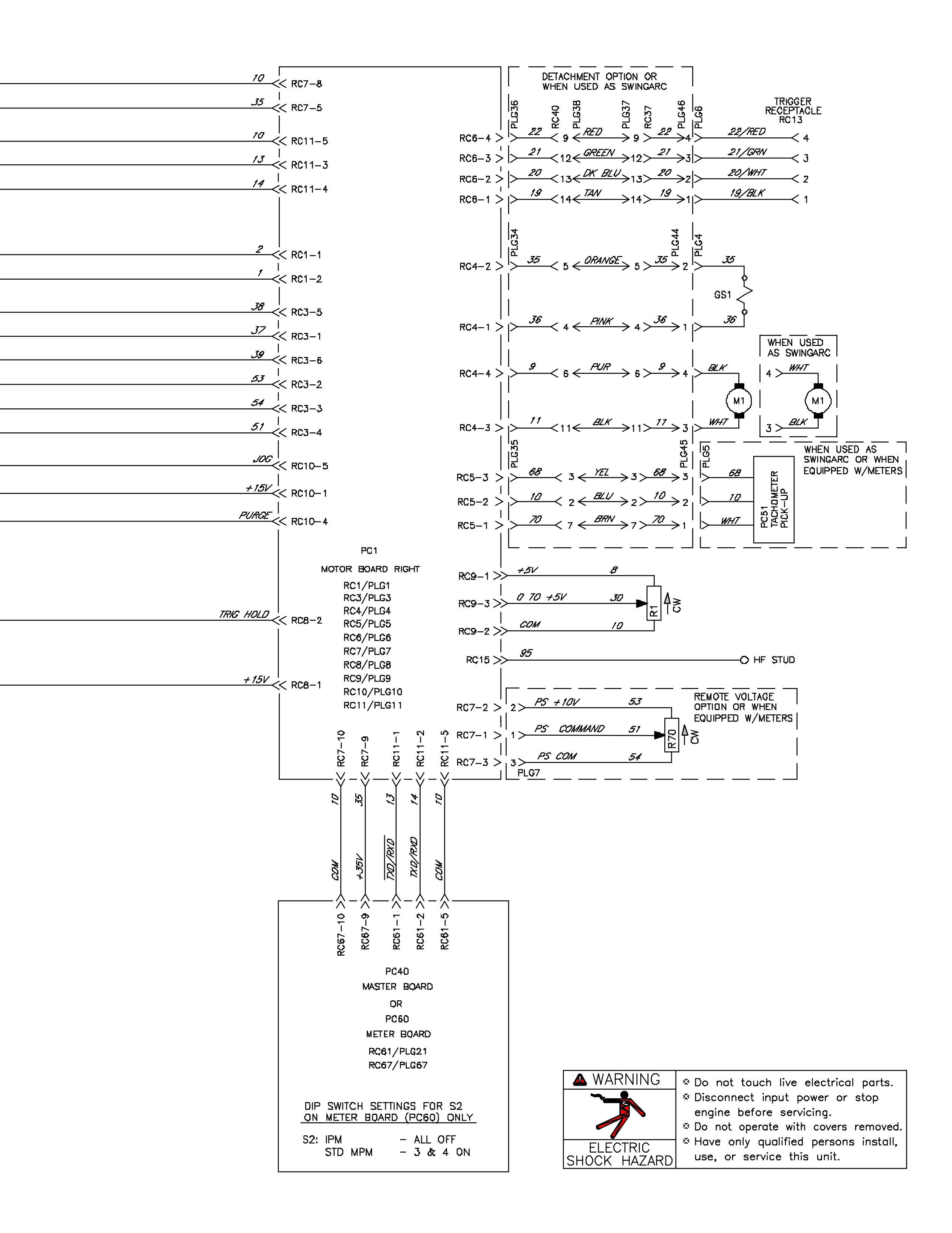


Figure 8-1. Circuit Diagram



DETACHMENT OPTION OR
WHEN USED AS SWINGARC
TRIGGER
RECEPTACLE
RC13
PLG36
RC40
PLG38
PLG37
RC37
PLG46
PLG6
PLG34
PLG44
PLG4
PLG35
PLG45
PLG5
RC7-8
RC7-5
RC11-5
RC11-3
RC11-4
RC1-1
RC1-2
RC3-5
RC3-1
RC3-6
RC3-2
RC3-3
RC3-4
RC10-5
RC10-1
RC10-4
RC8-2
RC8-1
RC6-4
RC6-3
RC6-2
RC6-1
RC4-2
RC4-1
RC4-4
RC4-3
RC5-3
RC5-2
RC5-1
RC9-1
RC9-3
RC9-2
RC15
RC7-2
RC7-1
RC7-3
JOG
+15V
PURGE
TRIG HOLD
22/RED
21/GRN
20/WHT
19/BLK
RED
GREEN
DK BLU
TAN
ORANGE
PINK
PUR
BLK
YEL
BLU
BRN
WHT
GS1
M1
WHEN USED
AS SWINGARC
WHEN USED AS
SWINGARC OR WHEN
EQUIPPED W/METERS
PC51
TACHOMETER
PICK-UP
PC1
MOTOR BOARD RIGHT
RC1/PLG1
RC3/PLG3
RC4/PLG4
RC5/PLG5
RC6/PLG6
RC7/PLG7
RC8/PLG8
RC9/PLG9
RC10/PLG10
RC11/PLG11
+5V
0 TO +5V
COM
R1
CW
HF STUD
REMOTE VOLTAGE
OPTION OR WHEN
EQUIPPED W/METERS
PS +10V
PS COMMAND
PS COM
R70
PLG7
RC7-10
RC7-9
RC11-1
RC11-2
RC11-5
COM
+35V
TXD/RXD
TXD/RXD
COM
RC67-10
RC67-9
RC61-1
RC61-2
RC61-5
PC40
MASTER BOARD
OR
PC60
METER BOARD
RC61/PLG21
RC67/PLG67
DIP SWITCH SETTINGS FOR S2
ON METER BOARD (PC60) ONLY
S2: IPM - ALL OFF
STD MPM - 3 & 4 ON
WARNING
ELECTRIC
SHOCK HAZARD
Do not touch live electrical parts.
Disconnect input power or stop engine before servicing.
Do not operate with covers removed.
Have only qualified persons install, use, or service this unit.

204 716-B

SECTION 9 – PARTS LIST

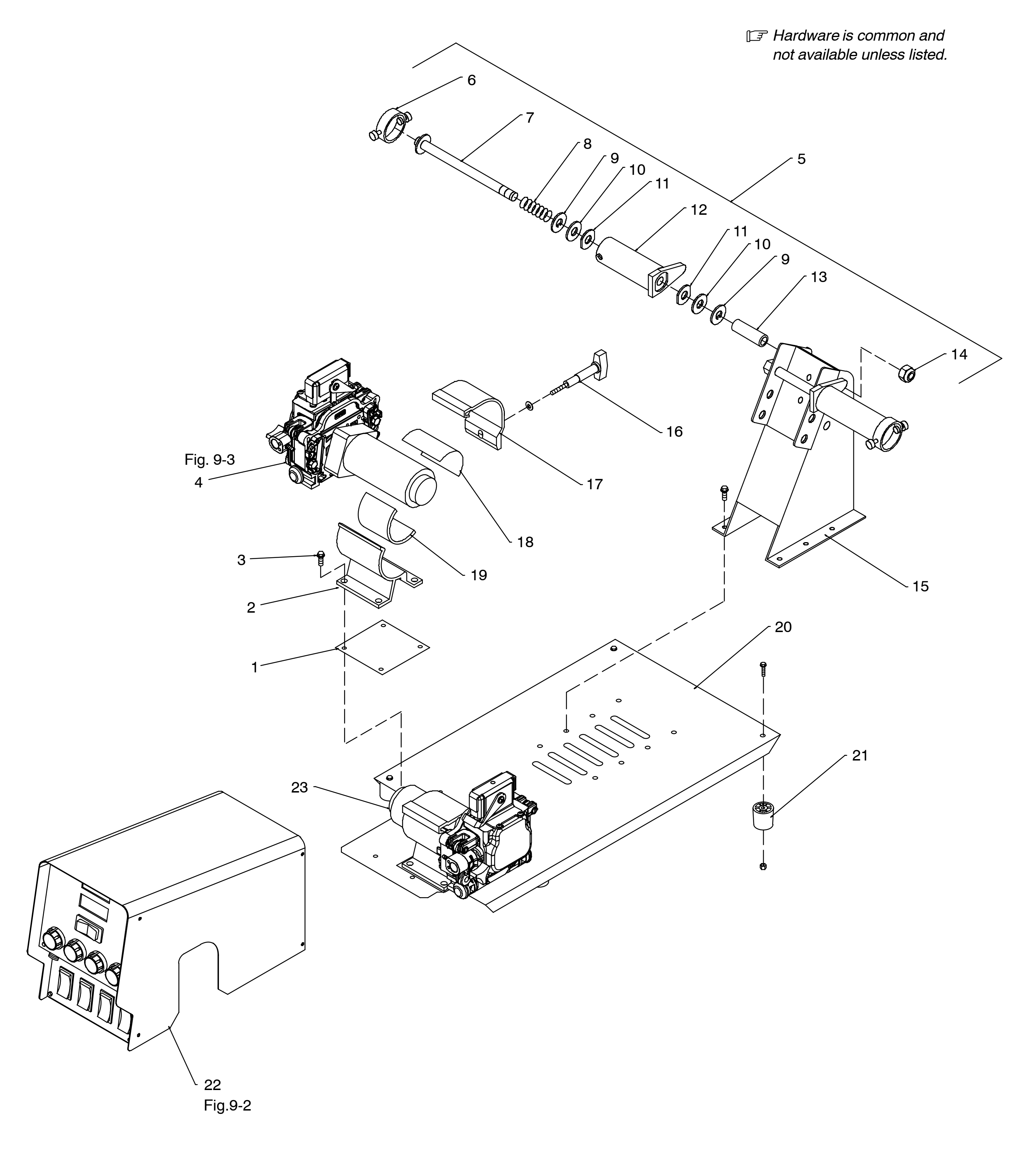


Figure 9-1. Main Assembly

Item No.	Part No.	Description	Quantity
		Figure 9-1. Main Assembly	
1	159 647	. . Insulator, Motor Clamp	2
2	159 646	. . Clamp, Motor Base	2
3	159 360	. . Insulator, Screw Machine	8
4	223 468	. . Drive Assy, Wire S/L 4 Roll	1
4	224 304	. . Drive Assy, Wire S/L 4 Roll W/Tach	1
4	223 469	. . Drive Assy, Wire S/L 4 Roll Lo−Speed	1
4	223 218	. . Drive Assy, Wire S/L 4 Roll Lo−Speed W/Tach	1
5	143 160	. . Hub+Spindle Assy, (Consisting Of)	2
6	058 427	. . . . Ring, Retaining Spool	1
7	180 576	. . . . Shaft, Support Spool	1
8	010 233	. . . . Spring, Cprsn .970 Od X .120 Wire X 1.250Pld	1
9	057 971	. . . . Washer, Flat Stl Keyed 1.500 Dia X .125Thk	2
10	010 191	. . . . Washer, Fbr .656 Id X 1.500 Od X .125Thk	2
11	058 628	. . . . Washer, Brake Stl	2
12	058 428	. . . . Hub, Spool	1
13	071 730	. . . . Tubing, STL .875 Od X 12Ga Wall X 2.500	2
14	135 205	. . . . Nut, Stl Slflkg Hex Reg .625-11 W/Nylon Insert	1
15	141 411	. . Support, Spool	1
16	208 339	. . Extension, Dual Clamp L.H.	1
16	208 338	. . Extension, Dual Clamp R.H.	1
17	156 243	. . Clamp, Motor Top	2
18	145 639	. . Spacer, Motor Clamp (Used With Low Speed Motor)	2
19	219 095	. . Spacer, Motor Clamp (Used With Standard Speed Motor)	2
20	139 226	. . Base	1
21	134 306	. . Foot, Rubber 1.250 Dia X 1.375 High No 10 Screw	4
22		. . Control Box (Refer to Figure 9-2)	1
23	228 275	. . Drive Assy, Wire R 4 Roll	1
23	228 279	. . Drive Assy, Wire R 4 Roll W/Tach	1
23	228 280	. . Drive Assy, Wire R 4 Roll Lo−Speed	1
23	228 281	. . Drive Assy, Wire R 4 Roll Lo−Speed W/Tach	1
	164 059	. . Hose Assy, Gas	1

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

☞ *Hardware is common and not available unless listed.*

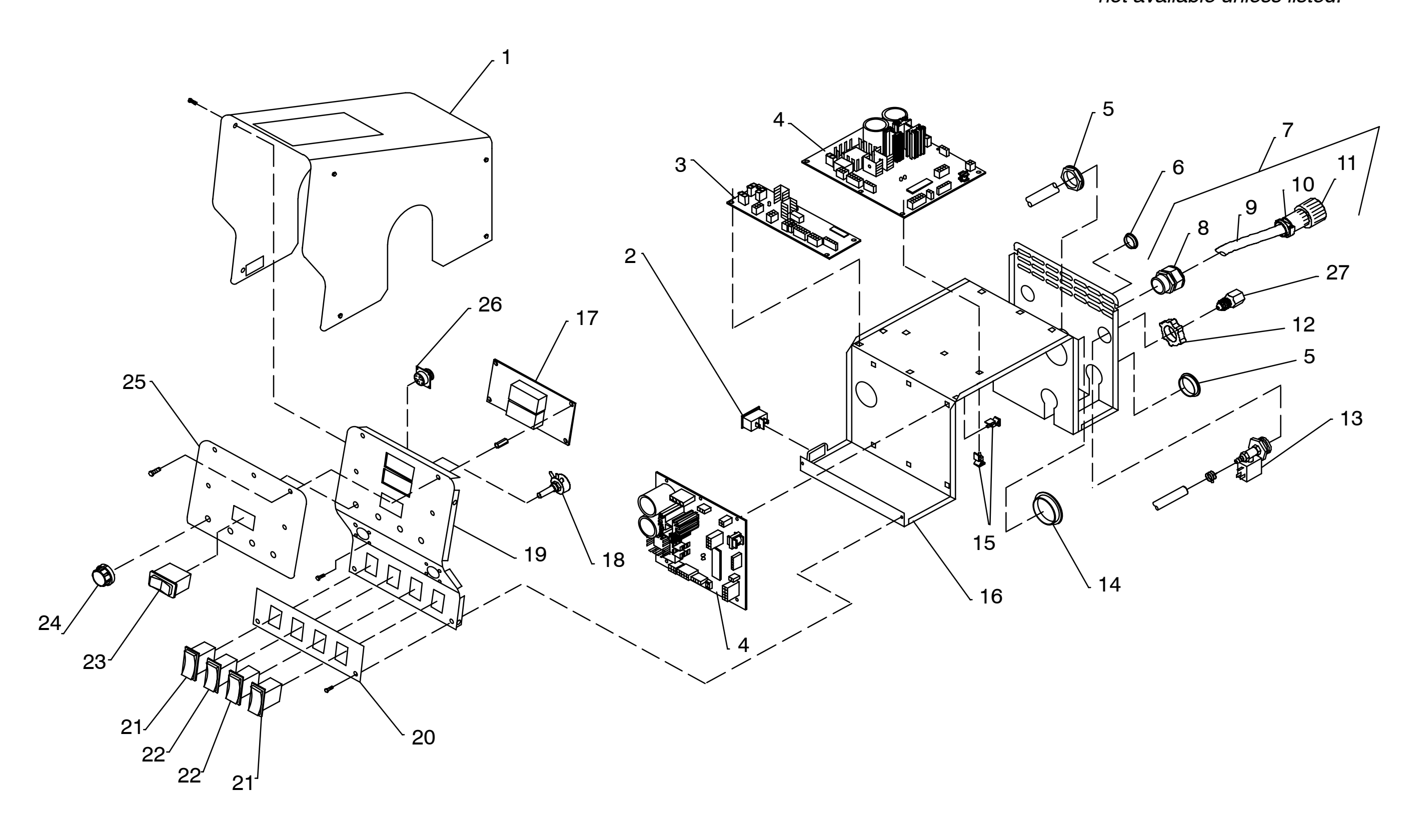


Figure 9-2. Control Box

Item No.	Dia. Mkgs.	Part No.	Description	Quantity Model D-75S	Quantity Model D-75D
			Figure 9-2. Control Box (Figure 9-1 Item 21)		
1		204 722	Wrapper, Feeder	1	1
		134 464	Label, Warning General Precautionary Static&Wire Fe	1	1
		178 936	Label, Warning General Precautionary Wordless CE Wf	1	1
2	S1	111 997	Switch, Rocker Spst 10A 250VAC On-Off Visi Red Rock	1	1
3	PC70	220 903	Circuit Card Assy, Dual W/Program	1	1
4	PC1, PC101	228 324	Circuit Card Assy, Motor Control W/Program	2	2
5		030 170	Bushing, Snap-In Nyl .750 Id X 1.000 Mtg Hole	2	2
6		000 527	Blank, Snap-In Nyl .875 Mtg Hole Black	1	1
7		200 196	Cable, Power 11.5Ft 8/C 2-14Ga 6-18Ga (Consisting Of)	1	1
8		139 041	Strain Relief	1	1
9		163 519	Cable, Port	11.5 Ft (3.5 m)	
10		079 739	Conn, Circ Cpc Clamp Str Rlf	1	1
11	PLG12	141 162	Housing Plug+Pins, (Service Kit)	1	1
	PLG52	174 823	Housing Plug Pins+Skts, (Service Kit)	1	1
	PLG74	115 093	Housing Plug+Skts, (Service Kit)	1	1
12		605 227	Nut, 750-14 Knurled1.68Dia .41H Nyl	2	2
13	GS1, GS101	219 062	Valve, Gas W/Fittings 34VDC	2	2
14		010 494	Bushing, Snap-In Nyl 1.375 Id X 1.750 Mtg Hole	2	2
15		134 201	Stand-Off Support, PC Card .312/.375W/Post&Lock .43	17	17
16		204 721	Enclosure, Control	1	1
17	PC60	228 343	Circuit Card Assy, Meter W/Program	0	1
17	PC40	228 336	Circuit Card Assy, Master W/Program	1	0

Item No.	Dia. Mkgs.	Part No.	Description	Quantity Model D-75S	D-75D
Figure 9-2. Control Box (Continued)					
18	R1, R101	073 562	Potentiometer, Cp Std Slot 1T 2. W 10K Linear D-74S	2	0
18	R1, 101, 70, 170	224 597	Potentiometer, Cermet Std Flat 3.75T 2 W 10K Linear	0	4
19		204 723	Panel, Front	1	1
20			Nameplate, Lower (Order by Model and Serial Number)	1	1
21	S2, S102	200 295	Switch, Rocker Spdt 15A 12V (On)−Off−(On)	2	2
22	S3, S103	201 642	Switch, Rocker Spdt 15A 12V On−None−On	2	2
23	S100	201 641	Switch, Rocker Spdt 15A 12V (On)−Off−(On) W/Leds	1	1
24		193 919	Knob, Pointer 1.250 Dia X .250 Id W/Two Set Screws	4	4
25			Nameplate, Upper (Order by Model and Serial Number)	1	1
26	RC13, RC113	048 282	RCPT W/Skts, (Service Kit)	2	2
27		211 989	Fitting, W/Screen	2	2

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

Dia. Mkgs.	Part No.	Description	Quantity
Harness Connectors/Receptacles			
PLG6,106	115 094	Housing Plug+Skts, (Service Kit)	1
PLG4,104	136 810	Housing Plug+Skts, (Service Kit)	1
PLG72	115 092	Housing Plug+Skts, (Service Kit)	1
PLG9,109	201 665	Housing Plug+Skts, (Service Kit)	1
PLG11, 21,71,111	131 055	Housing Rcpt+Skts, (Service Kit)	1
PLG7,67,107	115 091	Housing Plug+Skts, (Service Kit)	1
PLG17,70	158 719	Housing Plug+Skts, (Service Kit)	1
PLG117	165 404	Housing Rcpt+Skts, (Service Kit)	1
PLG1,77,78,79,101	202 592	Housing Plug+Skts, (Service Kit)	1
PLG3,75,76,103	115 093	Housing Plug+Skts, (Service Kit)	1
PLG51	174 824	Housing Plug Pins+Skts, (Service Kit)	1
PLG8,108	131 054	Housing Rcpt+Skts, (Service Kit)	1
PLG10,110	130 203	Housing Plug+Skts, (Service Kit)	1

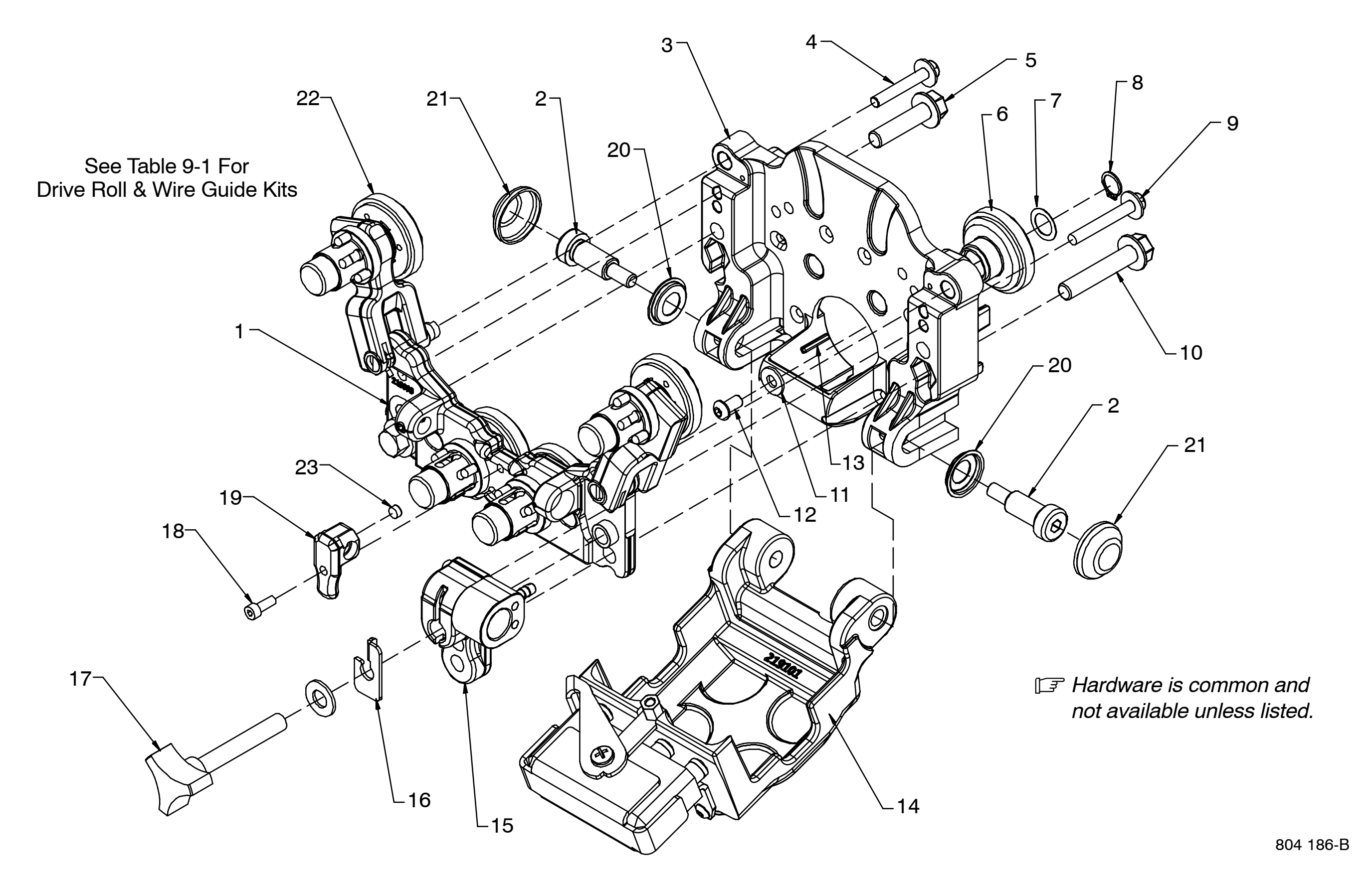


Figure 9-3. Drive Assembly, Wire (Left Side Drive Assembly Shown)

Item No.	Diagram marking	Part No.	Description	Quantity Model Left	Quantity Model Right
			Figure 9-3. Drive Assembly, Wire (Figure 9-1 Item 4)		
1		230 247	Kit, Swing Arm Assembly Lh	1	0
1		230 248	Kit, Swing Arm Assembly Rh	0	1
2		219 126	Screw, Shld Stl Sch .375−16 X .500 X 1.000 Shld	2	2
3		230 244	Kit, Insulator	1	1
4		108 943	Screw, 250−20x1.50 Hexwhd.61D Gr5 Pld	1	1
5		219 133	Screw, 375−16x1.50 Hexwhd.81D Pld	1	1
6		229 412	Gear, Spur W/Insulator	1	1
7		079 625	Washer, Wave .500 Idx0.750 Odx.015t Stl Lbs	1	1
8		605 308	Ring, Rtng Ext .500 Shaft X .035 Thk	1	1
9		601 941	Screw, 250−20x1.75 Hexwhd.61D Gr5 Pld	1	1
10		219 132	Screw, 375−16x2.00 Hexwhd.81D Pld	1	1
11		602 241	Washer, Flat .281 Idx0.625 Odx.065t Stl Pld Ansi.250	1	1
12		227 711	Screw, 250−20x .50 Button Hd−Soc Stl Pld Lkg Patch	1	1
13		092 865	Key, Stl .1215/.1230 X .750	1	1
14		230 238	Kit, Pressure Door Assy	1	1
15		230 246	Kit, Power Pin Clamp Assy Lh	1	0
15		230 326	Kit, Power Pin Clamp Assy Rh	0	1
16		219 136	Lock, Pin Power	1	1
17		219 096	Knob, Tri−Lobe W/.375−16 Stud 2.500 Lg Blk	1	1
18		219 125	Screw, 010−32x .50 Soc Hd−Hex Pln	1	1
19		219 091	Holder, Guide Intermediate	1	1
20		229 563	Washer, Cap .500 Id	2	2
21		198 425	Cap, Finishing 1.19 X .37	2	2
22		230 245	Kit, Drive Roll Carrier Gear	4	4
23		219 130	Screw, Set 250−20x .18 Conept Sch Stl Pln	1	1

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

☞ *Hardware is common and not available unless listed.*

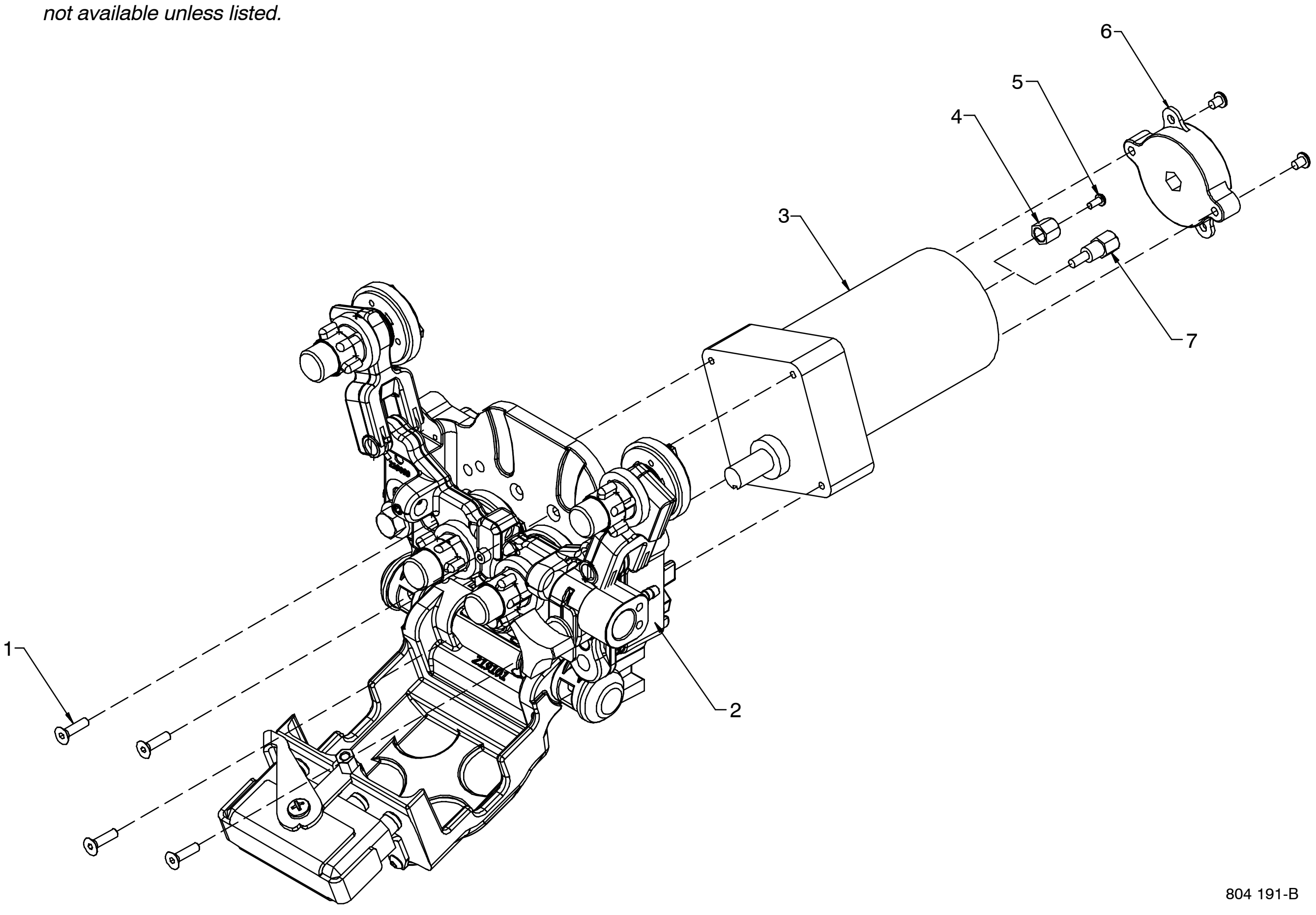


Figure 9-4. Drive Assembly With Motor (Left Side Drive Assembly Shown)

Item No.	Diagram marking	Part No.	Description	Quantity Model D-75S	Quantity Model D-75D
			Figure 9-4. Drive Assembly With Motor (Figure 9-1 Item 4)		
1		219 103	Screw, 010−32x .75 Flathd−Soc Stl Pln (Low Speed)	4	4
1		220 012	Screw, 250−28x .62 Button Soc−Hd Zinc (Standard Speed)	4	4
2		Figure 9-3	Drive Assembly, Wire	1	1
3	M1	219 088	Motor (Low Speed)	1	1
		153 491	Kit, Brush Replacement	2	2
3	M2	219 087	Motor, Gear .09HP 24VDC 273RPM 29:1 Ratio (Standard Speed)	1	1
		153 491	Kit, Brush Replacement	2	2
4		223 254	Adapter, Optical Encoder (Low Speed Motor)	0	1
5		190 742	Screw, 006−32x .31 Pan Hd Phl Stl Pld (Low Speed Motor)	0	1
6		223 252	Tachometer, Optical Encoder	0	1
7		223 253	Adapter, Optical Encoder (Standard Speed Motor)	0	1

Table 9-1. PD (Precision Drive) and Non-PD (Old-Style) Drive Rolls and Guides

Wire Size		PD-V for Hard Wire (1 kit or 4 rolls & 1 guide required)			PD-U for Aluminum (1 kit or 4 rolls & 1 guide required)			PD and Old Style	Guides for Old Style Drive Rolls (1 each required)		Standard Drive Rolls (4 required)			
Fraction	Metric	PD-V Kit	PD-V Drive Roll	PD Continous Guide	PD-U Kit	PD-U Drive Roll	PD Continous Guide	Inlet Guide	Intermediate Guide	Exit Guide	V Groove	U Groove	VK Groove	UC Groove
.023–.025 in.	0.6 mm	224871	222494	223096				219108	223515	223517	087130			
030 in.	0.8 mm	224872	222495	223096				219108	223515	223517	053695			
.035 in.	0.9 mm	224873	222496	223096	300039	227768	223099 (Red)	219108	223515	223517	053700	072000	132958	
.040 in.	1.0 mm	224874	222497	223097				219108	223515	223517				
.045–.047 in.	1.1–1.2 mm	224875	222498	223097	300040	227770	223100 (White)	219108	223515	223517	053697	053701	132957	083489
.052 in.	1.3–1.4 mm	224876	222499	223097				219108	223515	223517	053698	053702	132956	083490
1/16 in. (.062)	1.6 mm	224877	222500	223098	300041	227772	223101 (Blue)	219108	223515	223517	053699	053706	132955	053708
.068–.072 in.	1.8 mm	224878	222501	223098				219108	223515	223517			132959	
5/64 in. (.079)	2.0 mm							219109	223516	223518		053704	132960	053710
3/32 in. (.094)	2.4 mm							219109	223516	223518		053703	132961	053709
7/64 in. (.110)	2.8 mm							219109	223516	223518		053705	132962	053711
1/8 in. (.125)	3.2 mm							219109	223516	223518		053707	132963	053712



Effective January 1, 2006
(Equipment with a serial number preface of "LG" or newer)

This limited warranty supersedes all previous Miller warranties and is exclusive with no other guarantees or warranties expressed or implied.

Warranty Questions?

Call 1-800-4-A-MILLER for your local Miller distributor.

Your distributor also gives you ...

Service
You always get the fast, reliable response you need. Most replacement parts can be in your hands in 24 hours.

Support
Need fast answers to the tough welding questions? Contact your distributor. The expertise of the distributor and Miller is there to help you, every step of the way.



LIMITED WARRANTY – Subject to the terms and conditions below, Miller Electric Mfg. Co., Appleton, Wisconsin, warrants to its original retail purchaser that new Miller equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped by Miller. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

Within the warranty periods listed below, Miller will repair or replace any warranted parts or components that fail due to such defects in material or workmanship. Miller must be notified in writing within thirty (30) days of such defect or failure, at which time Miller will provide instructions on the warranty claim procedures to be followed.

Miller shall honor warranty claims on warranted equipment listed below in the event of such a failure within the warranty time periods. All warranty time periods start on the date that the equipment was delivered to the original retail purchaser, or one year after the equipment is sent to a North American distributor or eighteen months after the equipment is sent to an International distributor.

1. 5 Years Parts — 3 Years Labor
   * Original main power rectifiers
2. 3 Years — Parts and Labor
   * Transformer/Rectifier Power Sources
   * Plasma Arc Cutting Power Sources
   * Process Controllers
   * Semi-Automatic and Automatic Wire Feeders
   * Inverter Power Sources (Unless Otherwise Stated)
   * Water Coolant Systems (Integrated)
   * Intellitig
   * Engine Driven Welding Generators
     (NOTE: Engines are warranted separately by the engine manufacturer.)
3. 1 Year — Parts and Labor Unless Specified
   * Motor Driven Guns (w/exception of Spoolmate Spoolguns)
   * Positioners and Controllers
   * Automatic Motion Devices
   * RFCS Foot Controls
   * Induction Heating Power Sources, Coolers, and Electronic
     Controls/Recorders
   * Water Coolant Systems (Non-Integrated)
   * Flowgauge and Flowmeter Regulators (No Labor)
   * HF Units
   * Grids
   * Spot Welders
   * Load Banks
   * Arc Stud Power Sources & Arc Stud Guns
   * Racks
   * Running Gear/Trailers
   * Plasma Cutting Torches (except APT & SAF Models)
   * Field Options
     (NOTE: Field options are covered under True Blue® for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)
   * Bernard-Branded Mig Guns (No Labor)
   * Weldcraft-Branded TIG Torches (No Labor)
   * Subarc Wire Drive Assemblies
4. 6 Months — Batteries
5. 90 Days — Parts
   * MIG Guns/TIG Torches and Subarc (SAW) Guns
   * Induction Heating Coils and Blankets, Cables, and Non-Electronic Controls
   * APT & SAF Model Plasma Cutting Torches
   * Remote Controls
   * Accessory (Kits)
   * Replacement Parts (No labor)
   * Spoolmate Spoolguns
   * Canvas Covers

Miller's True Blue® Limited Warranty shall not apply to:

1. **Consumable components; such as contact tips, cutting nozzles, contactors, brushes, slip rings, relays or parts that fail due to normal wear. (Exception: brushes, slip rings, and relays are covered on Bobcat, Trailblazer, and Legend models.)**
2. Items furnished by Miller, but manufactured by others, such as engines or trade accessories. These items are covered by the manufacturer's warranty, if any.
3. Equipment that has been modified by any party other than Miller, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment which has not had reasonable and necessary maintenance, or equipment which has been used for operation outside of the specifications for the equipment.

MILLER PRODUCTS ARE INTENDED FOR PURCHASE AND USE BY COMMERCIAL/INDUSTRIAL USERS AND PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT.

In the event of a warranty claim covered by this warranty, the exclusive remedies shall be, at Miller's option: (1) repair; or (2) replacement; or, where authorized in writing by Miller in appropriate cases, (3) the reasonable cost of repair or replacement at an authorized Miller service station; or (4) payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the goods at customer's risk and expense. Miller's option of repair or replacement will be F.O.B., Factory at Appleton, Wisconsin, or F.O.B. at a Miller authorized service facility as determined by Miller. Therefore no compensation or reimbursement for transportation costs of any kind will be allowed.

TO THE EXTENT PERMITTED BY LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY.

ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY OR REPRESENTATION AS TO PERFORMANCE, AND ANY REMEDY FOR BREACH OF CONTRACT TORT OR ANY OTHER LEGAL THEORY WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE OR COURSE OF DEALING, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, WITH RESPECT TO ANY AND ALL EQUIPMENT FURNISHED BY MILLER IS EXCLUDED AND DISCLAIMED BY MILLER.

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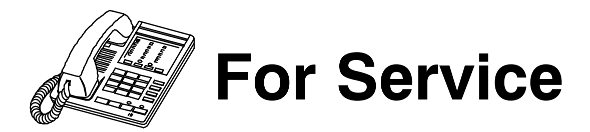
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Owner's Record

Please complete and retain with your personal records.

Model Name	Serial/Style Number
Purchase Date	(Date which equipment was delivered to original customer.)
Distributor	
Address	
City	
State	Zip



For Service

Contact a DISTRIBUTOR or SERVICE AGENCY near you.

Always provide Model Name and Serial/Style Number.

Contact your Distributor for:	Welding Supplies and Consumables Options and Accessories Personal Safety Equipment Service and Repair Replacement Parts Training (Schools, Videos, Books) Technical Manuals (Servicing Information and Parts) Circuit Diagrams Welding Process Handbooks To locate a Distributor or Service Agency visit www.millerwelds.com or call 1-800-4-A-Miller
Contact the Delivering Carrier to:	File a claim for loss or damage during shipment. For assistance in filing or settling claims, contact your distributor and/or equipment manufacturer's Transportation Department.

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